AMERICAN

Journal of Mining,

Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc.

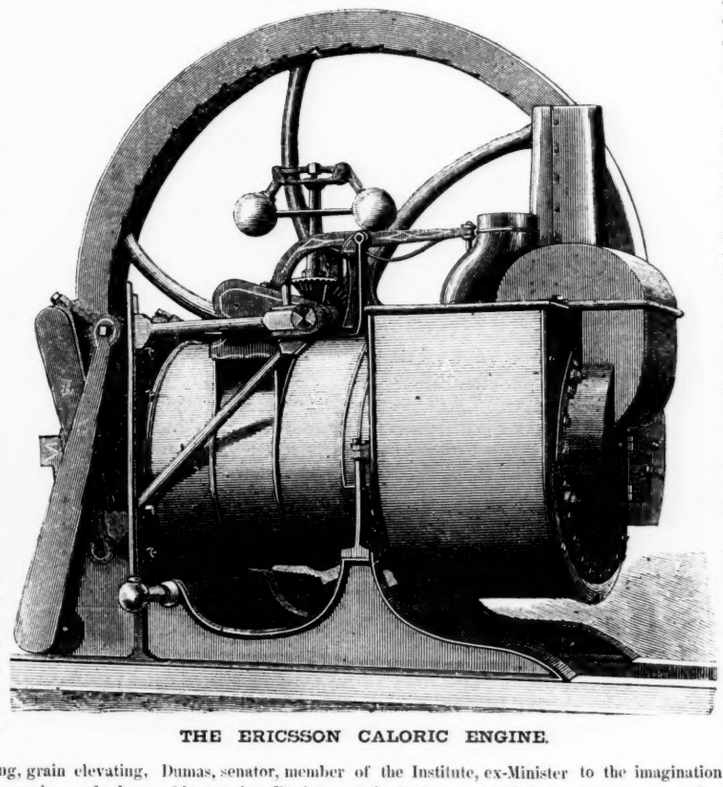
VOLUME I.
NUMBER 11.

NEW YORK, JUNE 9, 1866.

$4 A YEAR IN ADVANCE.
SINGLE COPIES TEN CENTS.

PORTABLE ENGINES.

Continuing our illustrated descriptions of such portable engines as may be used to advantage in the Mining Districts, we present this week a cut of the Ericsson Caloric Engine. It is claimed that, for safety, efficiency, economy and durability, it is unequalled; and with regard to some of these points, we could personally bear witness. For every description of light mining—such as hoisting ores, pumping in mines of no very great depth, ventilating works, etc.—it may be used with economy. An eminent consulting engineer recently reported to a large manufacturing establishment in Manchester, England, as follows: "All these Caloric Engines gave complete satisfaction, and apparently ample power for the purposes to which they were applied; but without experiment it is impossible to say what quantity of power they actually furnish respectively; but, judging by the appearance of things, they all worked well, and with surprising regularity, evidently developing a much larger amount of power from a given quantity of coal than could be obtained from Steam Engines, as at present constructed, of corresponding powers. And being such that they may be placed in any location from which a chimney may be reached, and not requiring water or skilled attendance, they are particularly desirable as a driving power for small manufacturers, who are thereby enabled to conduct their operations in the business parts of the cities, by occupying the upper lofts of the buildings. They are also used for operating hoisting machines in warehouses, mines and ships, and for driving mills of various descriptions; by printers, bakers, tanners, wire makers, bookbinders, cabinet makers; for sand sifting, ventilating, grain elevating, quartz crushing, glass cutting; for sawing and planing lumber, tobacco cutting, bone crushing, malt mashing, grinding cutlery, roasting, grinding and pulping coffee, ginning cotton, cutting feed domestic sawing—indeed, for all purposes where small power is required. They are also largely used in pumping water at railway stations, private residences, etc. My opinion, as an engineer, is, the Caloric Engine is better adapted than the Steam Engine for most purposes, when less than ten horse power is required, because: 1st. They are vastly more economical in fuel. 2d. There is no possibility of explosion. 3d. No water is required for them. 4th. The attendance of skilled labor is unnecessary. 5th. No attention is required for them while running, beyond what is necessary to throw in a few coals occasionally, which is all that is required to keep up a constant and uniform motion; all of which considerations become of deciding importance to those who require a small power only. As to the appreciation of this Machine by the public, it may well be said that whereas it was a few years ago looked upon as a mere mechanical curiosity, it is now regarded and acknowledged as a reliable motive power, and it is contracted for, bought and put to use as such, with satisfactory results." Mr. James A. Robinson of 164 Duane street, and 156 Reade street, New York, will give any further information on the subject desired by readers of the JOURNAL OF MINING.



THE ERICSSON CALORIC ENGINE.

A Century of Science.

One of the most eloquent men in France is M. Dumas, senator, member of the Institute, ex-Minister of Instruction, Professor at the Sorbonne and College de France. When he rises to address an audience there is a thrill of expectation, and a hushed anxiety to catch the words that are to fall from his lips. He has an entire and thorough command of the niceties of the French language, and added to this a marvellous familiarity with the growth and present standpoint of science. Recently, at the distribution of prizes awarded by the Polytechnic Association of Paris, M. Dumas gave a sketch of the condition of scientific knowledge a hundred years ago, and compared it with the progress of the present day. We translate a part of his address:—"In 1765 the employment of the forces of nature was limited to two motors, wind-mills and water mills. Heat had not been converted into a universal mechanical power; the steam engine was unknown. The sun marked by its daily returns the hours in the life of man, but Niepce and Daguerre had not made use of its light as the docile instrument of art; photography had not yet entered into the imagination of man. Electricity had neither given us the Voltaic pile, which decomposes the obstinate compounds, nor the galvanoplastic art which plates the metals without the aid of fire, nor the electric light, nor the electric telegraph, one of the marvels of modern times, due to the genius of Ampere; nor the formidable Ruhmkorff coil, the rival of gunpowder, and the just object of highest reward. Chemistry had no existence. Lavoisier had not yet immortalised his name by those discoveries which explain the reciprocal relations of matter composing the surface of the earth with the same clearness that Newton's laws afford the key to the movements of the stars which adorn the heavens. Earth, air, and water had not been decomposed; the nature of the metals and that of carbon was unknown; the acids alkalis, and salts now employed in so many arts then only offered obscure problems; the cause of combustion was ignored; the existence of gas, distinct from atmospheric air had not been determined; the proximate principles of plants and animals had not been defined; their respiration was a mystery, their nutrition an enigma; agriculture was a blind and devastating practice, ruining in turn the different countries of the globe, and not permitting to any people to fix itself in permanence on any spot. Themovements, the changes, and the transformations which affect the material of the surface of the globe and metamorphose it according to times and places, had no signification for our ancestors. The circuit, always in action, which nourishes the plant at the expense of the soil, the animal at the expense of the plant, and which returns to the soil through the animal that which it has lost; these harmonies of nature, which the commonest farmer now understands, did not enter into the imagination of the profoundest philosopher a century ago. Geology was nothing more than inspired romance; the crust of the earth had not then been explored; the history of its formation had not yet been written; it was then unknown that in the fossil remains of a rock is contained the infallible story of its origin; that in the history of the development of the globe is revealed the relative ages of the mountains and the clue to the former condition of the Alps and Pyrenees, and of their rival chains. Thousands of plants have been collected and named, but Jussien had not yet classified them into natural families; Cuvier had not applied the same laws to the animal kingdom. One could not then embrace in one view the *ensemble* of nature, from the ephemeral lichens which, at the summit of the Alps, or on the confines of the pole, mark the last palpitations of life, up to the giants of the tropical forests, whose existence dates beyond historic times; from the equivocal microscopic productions, the last argument of the partisans of spontaneous generation, up to man created in

the image of God. One could not, thus guided by Cuvier or Brogniart, mount from age to age, reconstructing in their forms, their aspect, and even their habitations, the animals and plants which have preceded the advent of man upon earth, and which conduct us through epoch upon epoch, back to the moment when life first maintained itself upon our globe. To-day man has acquired the right to say: Matter, and the forces which it obeys, contain no secrets which I do not know, or shall not be able at some future period to discover; the history of the earth has no longer any mystery for me; I am present at its earliest ages; I reconstruct the beings whom it has nourished; I know the precise date of the transformations upon its surface. My eye penetrates the profundity of space; I assign to each star its place in the oroit in which it must move; I weigh the sun; I analyze the substance of which it is composed, as if it could be placed in my crucible, and I can say of what elements the stars consist which decorate the vaults of heaven, even those the light from which requires ages to travel to the focus where the observer performs their dissection upon our earth; I play with the forces of nature; I transform the light into heat, the heat into light, electricity into magnetism, magnetism into electricity and all of these forms of activity into mechanical power; I convert one compound into another; I imitate all the processes of nature dead, and the majority of those of nature living; I render at will the earth fruitful or sterile; I give to it, or I take from it the power to nourish the plant. Life is an open book, where, from the embryo egg to the death of the animal, I read without obscurity the *role* of the blood which circulates; that of the heart which beats, and of the lungs which respire; that of the muscles which obey; of the nerves which convey the order; of the brain which commands; of the stomach which digests; of the chyle which regenerates. In fine, I apply to my use all of the forces and all of the gifts of nature."

Columns of Steel.

In France a few experiments were made some time ago by M. G. H. Love, upon small pillars made of Turton's steel, and having rounded ends. These pillars were one centimetre or 0·39 in. in diameter, the lengths being ten, twenty, and thirty times the diameter. The steel of which the pillars were composed, was found by experiment to have a tensile breaking strength of 108,500 lbs. per square inch. According to *Engineering*, the results show that, as in the case of cast and wrought iron, the resisting power of steel to compression decreases as the proportion which the length of the column bears to the diameter is increased; but this decrease in strength does not seem to be so rapid as in the case of the two first-mentioned materials. M. Love's own deductions are, that steel and cast-iron columns, having a length of from one and a-half to five diameters, offer about the same resistance to compression; whilst columns of wrought iron of the same proportions, offer only about half such resistance. When the length of the column is increased to ten diameters, however, he considers that steel offers a greater resistance than cast iron, in the proportion of 41 to 31, the proportionate resistance of wrought iron being represented by 17. As the proportion of length to diameter increases, the resisting power of cast-iron diminishes more rapidly than that of wrought iron, and that of wrought iron more quickly than that of steel, so that when the length reaches forty diameters, he estimates the strength of similar columns of the three materials to be in the proportion of the numbers 375, 562, and 1,500. It is wrong to found a law upon so few experiments; but, if the data above given are confirmed by future trials, steel will prove a valuable material for resisting compression.

Improved Furnaces.

An invention has been provisionally specified by Mr. W. Beardmore, of Parkhead, Lanark, which relates to certain improvements in the arrangement of furnaces used for puddling and re-heating iron, as well as the generation of steam and other similar purposes. The improvement results in the burning of the fuel much more economically than is done under the existing arrangements of carrying on combustion. The furnace consists of a hopper, or chamber, in which the fuel is placed in the green state, this fuel being situated above the fire-bars; as the coal descends, it becomes coked, and in this state is burned to the body of the furnace. When found necessary, as, for instance, when the draught through the furnace is low, a blast of steam may be introduced, for the purpose of raising the intensity of the incandescence.

Peace on the Plains.

Many of those proposing to go to the mining regions of the West, will be interested in learning that Col. E. W. Wynkoop, Special Indian Agent stationed at Fort Laramie, Kansas, reports to the Commissioner of the Indian Bureau, that mail traveling without an escort, across the Plains, is now attended with no danger; the Indians along the various routes being peaceably disposed. The Agent states that in his opinion, if the Government will only fulfill its pledges, the Indians hitherto hostile will continue to comply with the provisions of recent treaties.

Mining Summary.

California.

Tuolumne.—Recent correspondence of the *Mining and Scientific Press* states: A fine ledge of decomposed quartz, paying twelve to sixteen dollars per ton has been discovered, and is being worked by Messrs. Foote & Burns, near Garrote. The ledge appears to be about forty feet wide, and has been opened by a shaft to a depth of sixty feet. The rock is crushed dry under the stamps to the fineness of peas, after which it is ground and amalgamated in Varney's pans, three of which are in use. Another well-defined lead situated between Big Oak Flat and Garrote, is owned by Messrs. Snow, of Garrote, and Schermerhorn of the "Flat." About 140 tons of ore are now on the dump, which prospects at about the rate of thirty dollars per ton. . . . Black, Munn & Co.'s mine, about fifteen miles east of Coulterville, is full of water, the pumping works being out of order. The last crushing is said to have paid $45 per ton, the rock being taken from the bottom of the present shaft, which has 160 feet depth on the vein. The pump and hoisting gear are driven by an engine of 10-horse power, and everything goes to show that the owners are in earnest in their intention to test the value of the vein. . . . The vein of the Louisiana mine appears to be from three to six feet wide, about two feet of which is pay rock, assaying from $30 to $40 per ton, but of so particularly rebellious a character that it is with difficulty that even $12 is realized by the ordinary process. Mr. Hesleps, the present worker, has lately been trying a roasting process, but has thus far been unable to make it work satisfactorily, as the gold in the roasted ore refuses to amalgamate. He expects, however, to give the furnace another trial. . . . Matters on the Mariposa estate, Bear Valley, are in a rather precarious condition. The lease of the Dodge Bros. expires in a few weeks, and it is not known whether they will renew it or not, as a consequence of which the employees are in anything but a settled state of mind. In the Benton mills twenty-four stamps are running on very good rock obtained from a new discovery in the Pine Tree mine, while the Bear Valley mill is supplied from the Josephine. The Princeton is barely paying expenses and a little over, by removing the pillars from the old works. By this means enough gold has been taken out to pay all the workmen about the mine, and $3,000 over. No new explorations are going on in this mine, and it is believed that it cannot be reopened at a less cost that $50,000. The Mariposa mill is running a small portion of the time, the miners having leased the mine and mill. The last few runs have not paid more than half wages, while the men regard their back pay as "gone forever." The Mt. Ophir and Greene's Gulch mills have been stopped for months, and part of their material has been removed and sold. . . . Among the quartz mines of Hunter's Valley, is the Lafayette vein, which is owned by several citizens of Bear Valley. The claim consists of 4,000 feet on a vein running nearly north and south, and dipping eastward at an angle of 40 degrees. The deepest opening is by an incline on the vein 90 feet deep. A vertical shaft is being sunk to cut the vein at a perpendicular depth of 70 feet. This is intended for a permanent working shaft, and is large and well timbered. The vein is in slate formation, and is rather irregular in thickness. Its average throughout the old works is probably 18 or 20 inches, and it has paid the former owners from $20 to $500 per ton. . . . One and a-half miles north of La Victorie is the Carson and Barrett gold quartz mine which contained so much water that it was impossible to explore the underground works, but Mr. Carson informed me that it had been opened to a depth of 60 feet, showing a vein about a foot wide, lying in a north and south direction, with a slight dip to the westward. They have a 6-stamp mill, driven by a 12-horse power steam engine, which also runs the hoisting works and pump. The rock taken out thus far is said to average $125 per ton. A little farther on we came to the Potts vein. The course of this vein is northeast and southwest, and its width about four feet. It has been opened about 90 feet deep, and has heretofore paid from $70 to $110 per ton, the rock being worked in Floyd's mill. This mine and the Floyd—noticed last year—are under the charge of Mr. d'Artigue, of La Victorie. The latter mine has also been sold, conditionally, to San Francisco parties for $20,000. The buyers are now prospecting the mine, and have opened it to a depth of 125 feet. The last crushing is said to have paid $75 per ton. Several other veins in the valley are being prospected with every prospect of success; among which may be specially noted the Mammoth, owned by D. Jones & Co., which is opened to a depth of twelve feet, showing a vein two feet wide, much of the rock showing free gold. . . . On Sweetwater, Colorado, is the mine of E. B. Rollins & Co., which has been worked by the present owners about four years. It is situated in a granite formation, the strike of the vein being northwest and southeast, with a dip to the northeast of 70 degrees. Its average breadth is from twenty to twenty-two inches, as far as explored. It is opened by an incline 125 feet deep, and by drifts and tunnels on the vein 525 feet. The usual yield is from $16 to $20 per ton, though rock has been obtained that paid as much as $250. A 50-horse power steam engine furnishes power for the mill of sixteen stamps, and for pumping the mine and hoisting the ore. The mill is well built, and usually crushes from twelve to sixteen tons in twenty-four hours. About half-a-mile above the Rollins' mill is the Ellis mill, of 10-stamps, which has been stopped during the past winter, but is now being refitted, and will be started in about a week. After leaving the Ellis mill, Mr. Rollins accompanied me to visit the newly discovered vein of the Eureka Quartz Company, situated about three miles above Lovejoy's mill, and fifteen miles from Mariposa. We were accompanied to the mine by Mr. Snyder, one of the owners, at whose house I am now staying. The ledge is in a slate formation, running nearly north and south, with a slight dip to the west. It has been opened to a depth of 35 feet, and appears to be valuable. Its thickness is from sixteen to thirty-six inches, probably averaging two feet.

San Bernardino.—Slate Range correspondence of the *Alta*, dated April 27th, says: Permit me to inform you that this mining district "still lives," and, judging from appearances, will yet make a noise in the mining world. Situated as it is from the main thoroughfares of travel, and pursuing its unostentatious course of development, but few are tempted to deviate from the "beaten track" to investigate its merits. I propose to jot down a few of the improvements made here during the past year or two, and will begin with the Rochester Consolidated Mining Company. This company has erected a fine mill of 26 horse power, running at this time 13-stamps, and have four amalgamating pans. Although working only in the day time now, it is their intention by the 1st of May to work day and night. Their houses are substantially built of stone; one large dining hall, capable of seating thirty persons; a large kitchen and store house, and four large houses for sleeping apartments, besides a retort house of adobes, and a fine barn and blacksmith shop. The mill is situated at the mountain, about half a mile from the Rochester tunnel, whence the rock is obtained that they are now crushing. This mill derives its supply of water from three springs located in Dunn, Centre and Manhattan canons, and the water is conducted through 16,000 feet of galvanized iron pipes into a large reservoir. During two years of drought water was very scarce and the mill could not make full time, but this has been remedied by blasting large basins in the solid rock, so that they now have an abundance during the driest seasons. The mill has for a year past had an efficient engineer in Mr. John Yates, a gentleman connected for three years with the Mt. Ophir mill, on the Freemont estate. Fronting the mill, on the west, is a vast dry lake, some twenty miles in extent, containing an inexhaustible supply of soda, salt and borax, and it is only necessary to drive a team some three or four miles upon it to obtain a load of either. The fuel used in the mill is sage brush, (*artemesia,*) and grease wood, which covers the whole face of the country; and two Chinamen cut enough each day to supply the mill and kitchen for twelve hours. It is excellent wood for creating steam, and far cheaper than wood at either Washoe, Esmeralda or Reese River. The Rochester mine is about nine feet wide. Three tunnels have been driven into the hill; the quartz at a depth of 166 feet from the outcropping rock falls through a shaft from the two upper tunnels into the lower one, and is conveyed by means of a railroad to a dump-box with a trap, where it falls into the cart with little labor. Two men obtain ore enough to run the mill one day for twelve hours, and the cost is about $1 50 per ton. This is but one of the mines of the old company—the Albany, Cattarangus, Knickerbocker and Philadelphia assaying equally as well. The rock works about $16 per ton of 2,000 pounds, and they have already crushed about 5,500 tons, and when the new concentrator is in operation will yield at least $25 or $20. With the exception of some needed repairs to the boilers, etc., the only expense that will attach to the mine will be for labor and provisions. . . . The Francis' tunnel is situated about four miles up Dunn canon, and is intended to cut several valuable lodes, among them the Morrow, Francis and San Francisco. These claims have assayed from $800 to $1,500 per ton, and the tunnel is now over 600 feet, and they are daily in expectation of striking the Francis lode, although they contracted to run 1,200 feet. This will tap those veins from four to five hundred feet from their surface; and should they realize as much below as it assays above, this will open one of the richest mineral districts in the country. Although there has been about 1,500 claims recorded, a large number of claim owners are only waiting to see the result of the cutting of this tunnel to "pitch in" with renewed energy, and I am satisfied it is only necessary to complete this tunnel to bring here a large population. The distance from Los Angeles to this place is about 190 miles, and it can be shortened at least 50 miles by coming direct from Willow Springs. As it is, we have excellent roads and plenty of water.

Nevada.—The *Transcript* of May 3d says: We learn that a large and valuable quartz ledge was discovered in the vicinity of Zinc House one day last week, and work was commenced on it immediately. It is three and a-half feet wide, and has been traced by the croppings a distance of at least half a mile. The ore a few feet from the surface, show some good sulphurets and it is thought it will pay not less than $50 per ton. A lot of the rock will be taken, next week to the new mill at Rough and Ready, and some to Grass Valley, to be crushed. It is owned by G. K. Reed, Soggs, and others. Another fine looking ledge was found just below the Zinc House, a few weeks ago. The owners have run in on the ledge about 60 feet and have taken out some fine looking rock. . . . Work has been resumed on the Green, Mammoth, Last Chance and Emerald Isle copper leads, and the prospect of each of these companies is highly favorable. . . . Some two weeks ago we made a notice of some rich-looking quartz being found in the Tecumseh mine, near Washington. The specimens brought here would pay at the least calculation $50,000 per ton. Nothing more had been heard from this ledge until Tuesday evening last, when a gentleman arrived here with the startling news that in blasting in on the ledge it had increased in size from eighteen inches to four feet in thickness, and instead of the specimens sent here being from a streak in the vein, the whole lead on the top, as far as opened, was *literally covered with gold.* The prospect is now, the Tecumseh will equal in richness any lead ever discovered on this coast, the Allison Ranch mine not excepted. A great excitement prevails in Washington township, and many other valuable leads will be found as prospecting is at its height. . . . The mills in Little York township are driving ahead night and day, and all the places in this locality are gaining in wealth and population. The cement that is being taken out continues to be exceedingly rich. We hear that one of the companies cleaned up last week $6,380, another $2,000, another $2,300, and others a less amount, with a glorious prospect ahead. . . . A rich strike of some gravel diggings was made

about three week's ago, near Gaston Ridge, on Slug Ravine, between South Fork and Poorman's creek. The claims were discovered by Messrs. Coin & Eastman, who went to work and cleaned up the first week thirty ounces of very coarse gold. . . . Upon the Altona mine machinery will be erected immediately and work prosecuted with all the energy which liberal capital can command. We confidently expect that a few months hence Placer will rank as one of the first mining counties in the State. We candidly believe that, all things considered, says the *Stars and Stripes*, there is no better field in the world for quartz prospectors and miners than may be found within the limits of Placer and Nevada counties. . . . Quartz prospecting is going on very lively in these parts. On Deer Creek there are some thirty or forty companies at work, sinking shafts and running tunnels. Most of them are taking out some splendid looking rock. Small lots of rock from several of the ledges, on being crushed, paid from $8 to $23 to the ton. Nearly all of the above ledges have been struck within the past six months.

Sierra.—A big piece of gold, says the *Transcript*, containing a little quartz, was recently taken from some bank diggings near Kanaka Creek. The chunk, weighing over eighteen ounces is, we are told, on exhibition at the banking house of Marks & Co., at Moore's Flat. The diggings from which it was taken are owned and worked by John Montgomery and brothers, and are paying big. . . . All the mines in the upper part of Sierra county are paying well. Gold in considerable quantities is being taken out at Alleghany, Minnesota, and Forest City.

Nevada.

Pahranagat District.—The following is the result of an assay made at the assay office of Bohn & Molitor, Great Salt Lake City, on the 20th April. It was from surface rock taken from the surface of one of the ledges at Pahranagat. If the proprietors have a good well developed and well defined lead of that rock, and it holds out as rich as that, with some little improvement as they go down on it, we wouldn't mind having a few feet of it.

JOSIAH HOSMER, ESQ:

SIR: Your sample of ore, subjected to a careful assay, contains per ton (of 2,000 pounds) 867 97 ounces of silver, value $1,044 55 per ton. Extracted from one pound of ore 9.41-100 ounces of silver, value, 57c (concentrated ore). Respectfully yours,

BOHN & MOLITOR, Assayers.

Concerning the Blasdel party the *Reveille*, of May 14th, says: We have heard nothing definite or authentic concerning Governor Blasdel's exploring party for some time. That the party may have encountered privation and hardship in their attempts to reach Pahranagat as "the crow flies," through and over Death Valley and Armagosa desert, is very probable, for that is the inevitable fate of all prospectors. But we do not think any well grounded apprehension exists for the safety of the party. It is altogether improbable that an extreme disaster could have happened to so large a party—several of whom are no "chickens;" and it is still more improbable that an event of that kind could have occurred without being speedily known here. We were informed recently, through a person just returned from Silver Peak, that Governor Blasdel and a portion of the party had retured from the expedition, and had gone into the Kearsage District, in Esmeralda county, about 160 miles southwest of Austin. We learned also from the same source, that Professor Stretch, State Geologist, with a small and selected number, had continued the trip over the deserts and mountain ranges lying south and east of Silver Peak, for Pahranagat Valley. We believe the project quite feasible; at any rate, there are no obstacles which may not be overcome by brave, hardy, and resolute men. If this information is correct—and it is certainly very probable—we may soon expect to hear from both Governor Blasdel and Professor Stretch.

Silver Bend District.—Concerning this new District the *Reveille*, of May 12th, says: "It lies in Monitor Valley, in a range of mountains east of Smoky Valley, and is about 130 miles southeast of Austin. The discovery was made by Messrs. Child and Straight, who, after a pretty thorough exploration, located seven ledges. The samples of the ore which they brought in were assayed by Boalt & Stetefeldt, whose certificates are now lying before us. Three assays were made of ore from the Medora, a three feet ledge as follows: No. 1, $29 58; No. 2, $91 62; No. 3, $47 40; Pandora, also three feet thick, $281 22; and Transylvania No. 3, a huge vein, twelve feet wide, $236 98. We have also a certificate from the same assayers, giving the yield of sixteen ounces of ore from the Transylvania No. 1, by the process of smelting, as $1 43, or at the high rate of $2,606 66 of silver per ton. That section of the country is represented to be extremely well wooded, the growth being chiefly nut pine and cedar: and there is most luxuriant grass without stint. Water is also said to be copious, and the district would seem to possess unusual facilities. A correspondent of the same paper states: Timber is very abundant, but water is rather scarce, there being only three clusters of springs, though each cluster furnishes plenty of water for a mill. The springs are only one mile apart, so that rock from any of the mines already discovered will not have to be hauled more than a mile and a half. The mines are the most accessible of any I have ever seen—each and all lying on hillsides with very easy slope, so much so that teams can drive to the ore, which we hope soon to see lying in mountainous piles, broken and ready for the fine twenty-stamp mill, the erection of which is contemplated. A feasable road can be found in almost any direction. The formation in this district is very regular, composed of a very narrow belt of slate, cased in granite, carrying only three veins, all of which run parallel to each other, and seem to have a uniform dip or inclination. These veins, for richness and size, surpass anything yet discovered. I have had an assay from one of them which yielded $1,100 and over. I have had rock worked from another which yielded by mill working $2,600. This claim in particular, in my opinion, far excels the famous Murphy mine, and we hope soon to join our aged sister, Ione, in the shipment of bullion through the stockade town, regretting that our classic and reliable friend, Austin, will be far to our right.

Excelsior District.—A sale of twenty-five feet in the California ledge, Excelsior District, is said to have been made in Virginia city at $40 per foot. This, says the *Enterprise*, is a very small price for the stock, as the California is one of the best claims near Meadow Lake.

Battle Mountain.—The Reese River *Reveille* thus notices some rich copper discoveries: Recently Messrs. Sinclair and Pickett called at our office with a number of samples of the richest copper ore just discovered in this District, which lies about seventy miles north of Austin, near the terminus of the Shoshone range of mountains, and twelve miles from the Humboldt river, on the line of the original survey of the railroad. Sinclair, who is the Recorder of the district, was also with Pickett and Heath, its discoverer, and a large number of fine veins of copper have already been located by different parties. During their last exploration in the district, these prospectors unearthed and located six other ledges of huge dimensions and uncommonly rich mineral. One of them named the Virgin—undeveloped of course—is represented to be fully thirty feet wide, and a mass of copper; and another called Mary Louisa, of equal proportions, and exhibiting a similar rich quality of ore. Specimens of the mineral from these veins were laid upon our table, and they were beautiful to behold. Nearly every piece showed native copper. There were green carbonate, silver fahlerz, or gray copper ore, of light steel gray color, and red oxide of copper, holding crustations, of malachite, beautifully banded. Probably no richer copper ores can be produced on the coast.

Esmeralda.—Under date of May 2d, Columbus correspondence of the *Enterprise* states: "From Dayton to this place, by way of the present wagon road, is about 180 miles. We made the trip through with a span of horses and a light wagon in seven days' easy travel; found the roads excellent, excepting a stretch of heavy sand from five miles this side of Aurora to Adobe Meadows—a distance of twenty-five miles; also found convenient places for stopping and plenty of feed for stock until we left McBride's ranch, eleven miles this side of Adobe Meadows. From there to Columbus, a distance of forty miles over the north end of the White Mountains, there is no station, and only one place, twelve miles out, where water can be obtained. This we missed, but got along very well by melting snow. Columbus District is about fifty miles in an air line southeast of Aurora, is bounded on the north by the Great Virginia Salt Marsh; on the east by the Monte Christo Mountains; on the south by Fish Lake Valley; on the west by Captain Deal's Salt Bed, and covers an area of about thirty miles square. It was discovered by some Spaniads in July, 1864, but was very little prospected, and, in fact, but little known, until about a year ago, there being but little confidence placed in the extravagant stories told of its richness. Since that time there have been parties engaged in buying up and getting control of several of the best claims, and you may soon expect to hear of developments that will astonish those who don't know the richness of some of the surface ores in this district. The facilities for working the ores obtained are not of the very best order, though to any one used to these things in Nevada they are not so bad. There is a tolerable supply of wood (nut pine) to be obtained at from ten to twelve miles of the mines, and it is thought by good judges—practical mill men—that an abundance of water for running a ten-stamp mill can be obtained within a mile or two of the mines by digging ten or twelve feet. The laws first passed by the miners were a great drawback to the development of the district—a record of a claim, without any further development, making the title perpetual; but a meeting was held the 28th of last November, and the laws so amended as to require $10 worth of work done to each 200 feet of ground by the 1st day of July next. At that time, I have no doubt but there will be many good claims subject to re-location, as many of the pioneer locators have gone to other parts, and will in all probability never return to work their claims. The town of Columbus is situated near the mines, on the northwestern edge of a large flat called Dry Lagoon. It is composed of some fifteen or eighteen tents, and about half-a-dozen rudely constructed adobes, and contains about fifty souls, one-third of whom are Spanish. The mines extend over an area of about twelve miles in length by eight or ten in width. The pay ledges, though not extremely large, are of a fair average size; and I have very seldom seen, in the course of considerable experience, ledges so well defined. But as it may prove more interesting, I will mention only some of the more prominent claims that I have visited and examined in person. One mile northeast of town, in some low foothills of hornblendic porphyry, is the Baluarta ledge, traceable for several hundred feet. Near the foot of the hill the mine has been opened by sinking an incline on the ledge some ten or twelve feet, which at that depth shows a well defined lode of pay ore about four feet in thickness—in fact, I found it difficult to select pieces from the pile that did not show some horn silver. About 75 feet further down the company have sunk a shaft some 50 feet in depth, but as I had no way of descending I could not determine what they had found. This claim was located by some Spaniards in November, 1861, but has been bought up and is now principally owned by a Mr. Eaton, who is at present in San Francisco making further arrangements for the development of his mine. From here we crossed a flat half a mile to the westward, and ascending a low hill of a strangely burnt up porphyry formation to near the summit, we found ourselves at the Plata Verde Mine. This mine was discovered and located by Lewis and Fay in December last, and is almost entirely owned by Daytonites, among whom I may name Hazletine, Rouch, Sweetapple, Cross, Hunt (of the Sacramento mill), Sabine and others of the most enterprising men of that place. They have commenced to open their mine in a manner that shows both confidence and determination, as well as the ability and experience necessary to insure success. They have run a cut to the ledge—some twenty feet—which they have just reached, and from a pile of ore on their dump I have no hesitation in saying that I could have selected several hundred pounds that would work a thousand dollars to the ton—many of the pieces being literally covered with horn silver, and would ornament any cabinet in the State. The company have had several assays made, the lowest of which was $145, and ranging from that to $1,400 per ton. One, an analytical assay made by Van Wyck and Sanchez of Gold Hill, for working purposes, gave a yield of $863 in silver, with only a trace of gold. Twenty pounds of the ore, taken from the croppings three feet above the surface, worked, mill process, $740 to the ton, and a ton worked at the Dayton mill, in small lots, yielded from $283 to $462 per ton. The ore works easy, is very free from base metals, and is easily amalgamated. They will sink a shaft fifty feet on their lode, and if it continues good will erect a mill immediately. Three-fourths of a mile to the northeast of the Plata Verde is the Plutus. This company have a shaft down twenty-five feet, but have not struck their ledge yet. The croppings show some good ore, and the work is being rapidly pushed ahead by two of the owners, Messrs. Hank and Pardee. Two miles more, in a westerly course, brought us to the Servia, which is situated on the south side of a steep mountain, and in an entirely different kind of formation—the bed-rock being composed of a loose, shelly slate. The ledge can be followed easily by the croppings for half a mile or more. They have an incline down about thirty feet on this ledge, which has developed a stratum of good ore two feet thick, spots of which are extremely rich, but for some unaccountable reason, they are doing nothing towards its development at present. The east extension, the Petersburg, is being worked by Mr. Gregovitch, one of the owners, who is taking out some excellent ore. There are many other locations of merit that I have not space to mention now, among which is the Potosi, Northern Belle, Alexander, Ural, Dumay and Yellow Jack.

Flowery District.—We learn, says the *Enterprise* of May 12th, that the Rogers Mining Company have run a tunnel into a claim 720 feet in length, and have sunk an air-shaft 190 feet in depth, striking the main tunnel some 650 feet from the mouth. Near this point another shaft has been sunk from the main tunnel to the depth of sixty-five feet, where a large body of water was struck, and a fine paying ledge twenty feet in width disclosed. From this shaft a drift has been run in a northerly direction, through the mineral, some 225 feet, the ore holding its own in richness the entire distance. The same body of ore was also struck sixty-five feet above the lower level by a drift run in a northwesterly direction from the air-shaft. It is the intention of the company to sink a main shaft 600 feet on the ledge this summer, and build powerful hoisting works, so as to keep the mine from water and hoist rock to the surface. The croppings of the ledge contain narrow pay streaks, which assay from $1,000 to $3,000 per ton. This finding of a valuable ledge in Flowery District—which was almost abandoned several years ago—will give a new impetus to the working of some of the old locations which were, in times past, considered very rich. The Rogers Mill—belonging to this company—has been for some time past crushing rock from the Hale & Norcross mine, putting through about fifteen tons a day. The working of the mill has enabled the company to prosecute the work on the mine with but few assessments. It is confidently expected that within six months the mill will be crushing richer ore from their own mine than has ever come out of the famous Comstock. If this proves true, Flowery may again see some palmy days as of yore.

The Comstock.—The past week, says the *San Francisco News Letter*, has shown a very demoralizing state of the Washoe share market. On Wednesday evening everything tumbled—even the bears themselves trembled at the result of their own work, and came to the rescue in the afternoon, and Ophir went up and took with it the other stocks that had become tainted with the demoralization of those whose only object was on Ophir. The accounts from the mine are these: The body of ore found upon the ninth level, upon which they have drifted something over one hundred feet, came to an end in going north; the clay seam of this body at the south has been penetrated and ore found of a good quality, proving the clay to be only a selvage between two veins of ore; and this ore they are afraid to touch on the north for fear of more water than they can handle. This body of water is on the ninth or lowest station. On the sixth station, which is near three hundred feet above the ninth in a drift west, a body of ore, which, from its dip to the east, compared with the dip of the ore in the ninth, are no doubt a continuation of each other; thus proving a larger wealth in the mine at present than was ever shown before. . . . Nothing has been developed in the Gould & Curry of a favorable nature during the week; the unfavorable features of their lowest levels do not argue well for the lead at this point. . . . The office of the Savage has not any information concerning the sixth level, which their drift prospected so well, and the rumors on the street are that it did not turn out so well as was hoped. We cannot think that they were in far enough to ascertain the extent of the rock. Judging from the fact that the Hale & Norcross are in good ore up to the Savage line, at a depth of one hundred and sixty feet lower than the sixth level, is almost conclusive proof that the extent of the rich deposit will come up to the expectations of the most sanguine. . . . We have no change to note in the Hale & Norcross mine. Under the panic it has stood up well. . . . The panic had its effect upon the Chollar mine, and it dropped under three hunded, but rallied again, and is firm at our quotations. . . . Nothing new in the Bullion, but drifting without ore. . . . We have no change to note in the Exchequer,

Alpha and Imperial mines; none of them making expenses from lower levels, and no change can be looked for until the new shaft is done and drifts made from it. . . . The news from Yellow Jacket mine is conflicting, and from all that we can learn there is not the confidence in striking ore in the drift from the shaft that was entertained last week. . . . Nothing of importance has been developed in the Belcher mine. The work in Crown Point looks favorable as they go south for the finding of ore at a lower level.

Montana.

Correspondence of the *Post* dated Helena, May 8th, says: Trout Creek and Missouri river quartz, especially that bearing silver, is attracting much attention. All of Mr. Worden's machinery has arrived, and is being rapidly put together on the Cliff extension of the big lead. Mr. Worden will soon be working his mill. Col. Keyser pushes his mill on the same lead, and the Parson's tunnel on the Avant Jour extension of the same lead, which is designed to strike the ledge at a depth of one hundred and seventy-five feet is nearly completed. . . . . Correspondence of the same paper, dated Diamond city, May 3d, says, it is doubtful whether Confederate Gulch would be opened early this spring, and adds: "The prospecting of the main gulch, by the steam pumps, proves it to be of great wealth, and extensive preparations are being made to drain it, which will cost no small sum. The water through the big ditch will be in on the big bar in a few days, when the hydraulics will astonish the natives, by resurrecting the auriferous deposits of other ages. . . . . New York Gulch, says correspondence of the 12th May, is attracting a good deal of attention at present. I made a trip North a few days ago, and found it located about twenty-five miles down the river from here. It is about five miles in length: empties into Trout creek, near three miles from its junction with the Missouri river, and, for a four monther, is a large and healthy child, bidding fair to be a young giant. Throughout nearly one mile of the lower end of the gulch, the bed rock is dry, so that the honest miner can at once begin to take out some of the auriferous deposits to the exquisite delight of his gaunt purse. Laboring under numerous difficulties, backward Spring, no lumber, deep diggings—forty to fifty feet—little money, and shut in by hills and canons, they are doing well. Quite a number of claims are washing twenty to thirty dollars a day to the hand; others are almost ready. Two drain ditches in the upper part of the gulch, are far advanced. The upper one (Barns & Co.'s) will be to the bed rock in a few days. There are two towns in healthy progress, "Jersey" and "New York." There is quartz, here and hereabouts, that will yield from three to four thousand dollars to the ton. A better quartz section I have not seen than on the banks of Trout Creek and its tributaries. The pay streak in New York Gulch is from forty to one hundred feet wide and upwards, and very even. There is also abundance of good timber at hand, and a fine range for stock. The bed rock is shelly slate, standing on edge, and inclined slightly up the gulch. Gold is on the coarse order, well washed, and of a deep yellow color. . . . . A letter, dated April 21st, from German Gulch states: Mining affairs are not very lively yet. The weather is very unfavorable, and there is a good deal of snow yet in the gulch. Some snow falls nearly every day, yet the reign of summer is becoming more visible daily. . . . . Reynolds city (Elk Creek) correspondence, dated April 25th, of the *Radiator* states: Leaving Deer Lodge early last week, under a clear sky, the roads free from snow and even dusty in places, we were hardly prepared for the sudden change of climate experienced in a distance of forty or fifty miles. The trip down the Hell Gate river was delightful, the stream abounding in trout. Leaving Hell Gate, the prospector, trader and packer, with high hopes, gird up their loins for climbing the summit that divides the waters of that stream from those of Elk Creek and Big Blackfoot. Three miles out, and we encountered the snow, with which one is obliged to contend, in order to reach the newest and perhaps the best camp in the Territory. Winding our tortuous course down the mountain, we soon crossed Deep Gulch—said to be the richest in the camp. The claims are deep and hard to open, but the men appeared to be going in in earnest. Thos. H. Mallory, an old typog., has taken a "sit" in this gulch, with good prospects of "setting up" several "thousands." From Deep to this city is about two miles, over a divide made horrible by travel and the depth of snow which is now softening, so as to let animals break through the trail. Reynold's city is six weeks old, and contains one hundred and thirty houses—many of them well constructed—and is still rapidly improving. Two Justices have recently been elected, and law will soon begin. Judge Thompson, formerly of Folsom, Cal., is one, and Mr. Van Hagan, also a Californian, is the other. Yreka is the name of a rival city four miles below this, the town is growing rapidly, and its projectors claim for it superior advantages. Elk Creek is a very fair stream; and I have satisfied myself with the pan that it will pay, and many are demonstrating the fact with sluices. Keenan, Johns and several others are on the rock, and Burtt will soon be. . . . . The *Radiator*, of May 12th, says: Quite an excitement exists in relation to a new discovery said to have been made in the early part of the week on the head waters Big Rock Creek, a tributary of Hell Gate river. We are informed that the prospecting party obtained as high as five dollars to the pan. This new district embraces gulches also that empty into Bitter Root from the north. Big Rock Creek falls into Hell Gate from the south a short distance below the Flint creek hills. The discovery is in the range that divides the Hell Gate from the Bitter Root. . . . . The following Elk Creek items are from the *Radiator*, May 5th: J. W. Keenan, with four men, is cleaning up from $150 to $250, per day, to the sluice, in the main creek; Johns, with same force, from one to two hundred. The claim on Bilk Gulch, in which Charley Marden is interested, yielded $680, with one rocker, one day last week. Pres. Standefer, Bas. Wood, Dad. Hulvey, and others, have been doing well, in a swail near the head of Shanghai Gulch; but it is about to peter out. . . . . Al. Peacock is making good wages in Day's Gulch; Peter thinks he has twelve dollar diggings. . . . . Pritchett and Barlow's train, which left Umatilla Oct. 14th, arrived here yesterday, being out six months and ten days. They wintered on Horse Prairie, and lost twenty-four horses. . . . . Fairchild has laid out a city at the mouth of the Jocko, in the name of Savage, Adams & Co., and calls it Jocko city. The same firm through the same agent, will establish another town on paper at the Pend Oreille Falls, and another at Cabinet rapids, and secure the portages at those places. . . . . John Hildreth has found a ledge of good looking rock, well defined, and many feet thick, beyond the Billy Weasel. . . . . Mr. Mulkey is pushing his wagon road ahead from here to Hell Gate river, another will soon be started, via Big Blackfoot. . . . . A stampede took place, May 1st, at Elk Creek. "Oregon John" and Frank Trumble were prospecting on Saturday, near the head of deep gulch when John fell down on the crust of the snow and broke through. Taking the circumstance for a lucky indication they sunk a hole and found good prospects; hence the stampede. . . . . More gold has been exhibited during the week than is usual in this town, many course pieces have been picked up—Wheelock & McBride picked up $100, or over, in lumps in the ground sluice. Charley Marden's claim has paid between six and seven thousand dollars within two weeks. . . . . We extract the following mining intelligence from the same paper: Indian creek is beginning to pan pretty well. From recent accounts from there we learn that much gold is being taken out now, out of the upper part of the creek, where water is in greatest abundance, extensive mining operations are looked forward to in that creek as soon as washing privileges are bettered. A large ditch is in process of digging which will lead water on the lower portion of it, where much the best prospects have been obtained and the gold is more promiscuously scattered. . . . . During the past week the work of mining has gone briskly on, in main street, the business part of town, seriously interfering with travel and business. Various propositions have been made to abate the nuisance, the last of which is that the merchants intend to commence countermining—that is, bridging above, while the miners work beneath. . . . . A friend just over from Diamond city informs us that seventeen pounds of gold were cleaned up, from one run, on the bar, below town, on the first of the week. . . . . The *Post*, of the 12th ult., contains the following items: There is considerable excitement about Wigwam gulch, discovered by Mr. Woodman. The gulch is ten miles long and heads from the back of Bald Mountain, Summit District, down to the Madison. The gold, a sample of which we have seen, exactly resembles that of our Western placers and Blackfoot. The prospects obtained along some miles of ground, on the benches vary from a good show of colors to twenty-seven cents at and near the surface. A party of a dozen are about starting for the purpose of thoroughly prospecting the whole gulch. Wood is in abundance, and a good stream of from seven hundred to eight hundred inches runs through the whole length. . . . . The "Richmond Hill" lode, one of the numerous quartz ledges discovered in Hot Spring district during last fall, assays at a depth of twenty-six feet, $300 per ton, and as soon as the mills in that locality commence running, will contribute no small amount to the heavy shipments of bullion from this country. . . . . Shirt-sleeves and gum-boots are again visible in Alder gulch; the flash of shovels in the sun, and the revolving windless, all tell of work to be done and men to do it. Those who were ready for a start are doing well, from Summit to Junction, and those repairing damages or starting into their claims are busy and hopeful. There is more gold in Alder than ever came out of it, and when it is flumed, as it eventually will be, this fact will be apparent. Scores of millions of gold yet lie in the gulch and bars of this splendid auriferous deposit. . . . . We have seen some excellent specimens of coarse gold taken from Wisconsin Gulch—a locality which has only one fault, in a mining point of view, that of being too near this city to be appreciated as it deserves. Mr. Fairweather, one of the discoverers of Alder Gulch, is running a set of hydraulic works, and taking out good pay. If Wisconsin were two hundred miles away, we should now be chronicling a most exciting stampede. . . . An assay of rock from the Rockfellow lode, in Rattlesnake district, made in this city (Helena), shows 993 oz., 1 dwt., and 8 grains of silver to the ton of ore, with slight traces of gold. The ledge, which is thirty feet wide between the wall rocks, was discovered last fall by Mr. S. Decker, and there is a shaft forty feet deep sunk on the discovery claim. . . . The *Radiator* mentioning the Blue Cloud lode, states: It is well defined, eight and a-half feet thick; shaft, 38 feet. Three-quarters of a pound of the rock yielded sixty-five cents.

Colorado.

The *Miner's Register*, of May 22d, says: Shipments for the week ending Wednesday morning, (16th inst.,) foot up very handsomely. In small lots Geo. T. Clark & Co., purchased twenty-one and one-half ozs. (21½.) Sensenderfer's mill on Clear Creek is rapidly resuscitating the down-trodden reputation of stamps and inclined amalgamating plates, yielding steadily results that are to say the least encouraging. From this source we chronicle the product for the past six days to have been one hundred and forty-three ounces and four dwts., (144-4) whose currency value is $2,900. The Narragansett by the same process brings to market a fine retort of one hundred and two ounces and ten pwts. (102-10,) the coin value of which is $2,000. The Hope Desulphurizer has fully realized our anticipations, and sends one hundred and three ounces six dwts., and twelve grains (103-6-12,) value, advanced, $2,000. The Ophir Company has from stamps ninety-one and one-half ounces, value $1,600. The Philadelphia, from among its first runs on Gardner ore, returns thirty-four and one-half ounces 34½,) value $700. Mr. Fitzpatrick returns one hundred and fifteen and one-half ounces (115½.) Warren Hussey & Co. have purchased during the same period gold in bars to the amount of three thousand dollars. The First National Company, Rodman, agent, send fifty-eight ounces. Then comes the Black Hawk Company with two hundred and fifty-six ounces, overleaping all others and still further demonstrating that stamp mills are not the least expensive and ingenious methods for gold saving. Thus we have one thousand and seventy-six ounces for six days, which is quite a respectable showing for the times. There are strong indications everywhere exhibited that we are to have an active season of mining. The prospect grows brighter day by day. . . . . The same paper remarks that it is very gratifying to know that the determination to open and develop the mines of Clear Creek county is universal. It shows that there is no fear as to their value and extent on the part of those who are interested in them, and this course persisted in, will assuredly give them a fair value in the mining markets of the East. . . . . Also that the prospects of Empire bid fair for a busy season. Several companies organized there, are about to recommence operations, and it is hoped with a fair assurance of success. . . . . The Black Hawk *Journal* says that a gentleman of Ward District took cast 50 ounces, avoirdupois, of ore from the Columbia lode, and smelted it in crucibles, getting a little more than 11 ounces of pure copper, or more than 25 per cent.; and adds that there is not the least doubt all Colorado standard gold ores are worth as much for copper as they are for gold. . . . . We understand, says the *Register*, 15th ult, that contracts have been let at six cents per pound for freight from Achison to Denver. The cost of living will be greatly decreased and wages will decrease in the same ratio. The fine weather, since the storm, is very suggestive of livelier times among the mines. . . . . The Mammoth Mill is stopped for repairs to the flue. The furnace will be built over and the stack upright sixty or seventy feet. It is already started and up twenty feet. At the same time the burnishing and amalgamating works are to be doubled in capacity. This will make the mill equal to about twenty tons a day. He expects they will soon order the opening of their mine on the Mammoth lode. Mr. Leeper, one of the Leibig Company at Empire, is going to build a Keith furnace next week. Mr. Adams expects to commence one soon. . . . . The Montrose mill is again running, after detention for repairs and from bad weather. Charley Tyler is sinking on the Golconda Discovery, and showed us beautiful specimens of quartz stuck full of native gold. The furnaces at the Lyon mill ore all running. A cord of Bobtail ore is to be tested in the test furnace by itself as soon as they have made bottom, and $2,000 is expected from it. The *Journal* says: Mr. Bruce has started his mill running by water, and on ore from the Simmons, which he has been mining for some time. Mr. Armor is also working on the Simmons and has struck a vein of ore fifty or sixty feet from the surface. The Simmons ore is very refractory.

Arizona.

The Arizona *Miner* has the following in regard to quartz mining in that Territory: The work upon the shaft being sunk on the discovery claim of the Vulture Lode, by Mr. B. Phelps, and the result of which is to determine his agreement for the purchase thereof from Mr. Wickenburg, is progressing favorably, and there is little doubt that Mr. P. will be satisfied with it. He has now gone to San Francisco to return at an early day. The Tyson and Coulter mill is working finely. The ore yields an average of from $60 to $90 per ton. 350 tons have been crushed by this mill. 700 ounces of amalgam lately retorted gave a return of $4,000. The Curtin Chase mill having been supplied with a battery of five stamps, (the same as the other mill) is also in successful operation, under the management of Jack Swilling, who brought the stamps from California, and who represents all the parties interested in the mill. Forty to fifty tons have been crushed by this mill. The expense of carting the ore from the mine to the mills is $15 per ton, and the cost of wood $8 per cord. No arrastras are now in operation at Wickenburg; $2,000 of the Vulture gold sent to the San Francisco Mint returned $16.37 per ounce, which refutes the report that Vulture gold is an inferior article. The Bowers' mill, on Lynx creek, is working well. Mr. Borger is said to have purchased a mill for this place, and we know of two others lately started from San Francisco for Prescott. The Nickroy mill is not yet put up. The Woolsey mill, on the Agua Fria, near Woolsey's ranche, will be in operation within the present month. The coming spring and summer will certainly inform us as to the worth of the lodes in this vicinity, and if half of those who propose bringing mills should do so, we will have a dozen more than those named in operation here before fall. . . . The *Miner* of May 14th has the subjoined: We hear that the Thunderbolt Crusher mills are at Hardyville, and that wagons will go from here at once for at least one of them. Mr. Borger's mill is supposed to be at La Paz, and will be ordered to Hardyville unless transportation can be had at La Paz. Messrs. Coulter and Tyson, having a trusty friend going to San Francisco, have instructed him to secure their stamps, and will remain here preparing a place for their mill on Lynx creek. Mr. Wickenburg is doing well with his mill at the Vulture. The Curtin mill, now owned by Jack Swilling, is offered for sale, and may be brought here, as Swilling is absorbed in the proposed expedition to the Chiricahua mountains. The Vickroy mill is not yet placed, although the shaft on the Bully Bueno is progressing, and said to show a large vein. Colonel Woolsey's mill, to run by water power, and put up near his Agua Frio ranche, will be in operation during the present month. Arrangements are making for a mill on the Big Rebel and other lodes in Walnut Grove, and Mr. Hardy is to have a large mill to work the ore of his Southern Cross lode, near Hardyville. Work is progressing, and a mill will soon be put on the Moss lode. . . . In sinking the new shaft on the Bully Bueno lode, the ledge has been struck at thirty feet deep very rich, and, it is said, fourteen feet wide. This, we think, is one of the best lodes in the country. . . . Tucson correspondence of the S. F. *American Flag*, da-

ted March 26th, complains of the uncertainty of the mails, and adds that the mines in that vicinity are very rich, and that there is plenty of them; also that General McDowell's party, on leaving Tucson, took with them a quantity of silver extracted in a rude way from the mines.

Idaho.

A correspondent of the S. F. *Bulletin*, writing from Nez Perces Reservation, April 17th, says: Few people out of the Territory seem to have any idea of the wealth of the Salmon river region, the most important point of which, at present, is Warren's Diggings, Idaho county, 165 miles in a southeasterly direction from Lewiston. The papers have said little of the country since the excitement in regard to it several years ago, but from $8,000 to $20,000 is shipped from it weekly by express during the summer season, nevertheless. A great quartz fever prevails this side of Warren's, and numerous discoveries of silver-bearing veins have recently been made there. On the north side of Salmon river are the Florence, Daniel Boone and Brother Jonathan, and on the south the Secret, Idaho and many others. Some of these have been traced a long distance, and are thought to be extensive. There is ample water power and plenty of timber in the vicinity; the leads are so situated as to be easily drained, and the country promises to develop great mineral wealth. The most of the travel to this region is by the way of French creek Ferry, which is located on Salmon river, about nine miles from Florence City, on the trail to Warren's Diggings, via the celebrated Warm Springs. . . . A recent letter, dated at Ruby City, says: As to the various ledges here, I think they are all good, and will all pay to work—some more than others. Among the most prominent now are the Poorman, Trook and Jennings, Oro Fino, Morning Star, Silver Cord, Silver Brick, Minnesota, and others. The Poorman is closed until the first of June, so its untold wealth will remain hidden yet for a time. The Trook and Jennings still continues to take out very rich ore. The Silver Cord is an old ledge, discovered among the first, but was not much thought of. The original locaters did a little work on it, but concluded there were hundreds of better ledges here, and let it run out. Another party came along and located, and they having struck something they thought better forfeited it. Last fall the original owners concluded they would do some more work upon the ledge, as it appeared to be in a good location, and they had secured their other interests. They had not sunk over three feet upon it before they struck splendid rock, and taking a pan of the loose rock and earth they panned out $22.10 in one pan; thus, by very little work, a ledge that was considered worthless was demonstrated to be one of the best in camp. There are numerous interests here which have turned out in the same way. There is scarcely a ledge in Flint District but which has been similarly located and re-located twice or thrice, and now it is known that there is not a poor ledge in the district. A little work has accomplished wonders here in many instances, and men will be astonished at the result which will be produced in Carson and French districts when the miners get fairly at work, and rely upon this market for the sale of their ledge rather than the eastern. You seem to doubt the existence of tin here in any great quantities. You are entirely mistaken. I believe there is more tin in the mine at the head of Jordan creek than in all the world besides. The ledge or deposit is two hundred feet wide, and for nearly the entire width every piece of rock is the richest kind of ore. We have tin enough here to tin over the world, and we want the capital and machinery to get it out!

West Virginia.

The Parkersburg *Gazette* says: A company boring for oil on the farm of Wm. Cunningham, situated in Jackson county, West Virginia, while going down, went through a vein of metal about eighteen inches thick. The company took no particular notice of the borings, but continued drilling until they became satisfied their efforts in search of oil were fruitless, when they abandoned the well. In recurring to the strata through which the drill had passed, the owners thought of the metal vein, and immediately concluded to have it analyzed. A quantity of the metal boring was sent to New York, where it has been assayed and pronounced to yield ninety-eight per cent. of pure silver. Underneath this vein, which is 310 feet from the surface, is a vein of silver quartz four feet thick. The gentlemen from whom we learn the foregoing facts, give the following account of the strata in the well: First, forty feet of hard flint-rock; next two hundred feet of soft soap-stone; then a layer of blue rock; next soft soapstone; then the silver vein eighteen inches thick; next four feet of quartz, and then a bed of black sand, similar to the sand found in the gold mines of California. This valuable discovery has been made on a small farm located above Letart Falls, six miles above Ripley's Landing, West Virginia. The owners have been offered, since the discovery, two hundred thousand dollars for the farm, but they have refused to sell at any price, as they design developing it themselves. They are already at work reaming out the well preparatory to sinking a shaft, the machinery for which was brought up from Cincinnati on the steamer "Leonidas" on her last trip.

Utah.

The Deep Creek mines, says the *Mining and Scientific Press*, are now attracting attention. They were discovered in the fall of 1864; but very little work was done. The following year a copper mine was opened, the ore from which proved to be worth $380 per ton in San Francisco. The silver lodes, however, are regarded as the most important. The *Vedette* says: The result of fifteen assays made by Mr. Hartzline, of Eagle canon, from the croppings of the Emet ledge, gave all the way from $50 to $250 in silver, and $9 to $23 in gold, per ton. The ledges vary from six inches to three feet in width at the surface, and, as far as they have been developed, increase in width downwards. Deep Creek is about 185 miles west from Salt Lake City, on the Overland Mail line, and the principal mines are about thirty-three miles from Deep Creek station, on what is known as the Old Emigrant road. The *Vedette* of May 17th says, in reference to the Rush Valley mines: The operations now in progress in Rush are characterized by energy and sagacity of purpose. Owners of ledges are availing themselves of every opportunity to develop and prove the value of their property. With each day's labor they behold increasing evidences of the value of their mines, and none doubt the future success of that district. Several furnaces are rapidly approaching completion.

New Jersey.

During last fall a mine of iron ore was opened on the mountain east of the village of Bethlehem, Hunterdon county, and worked steadily all the winter with a small number of hands. An average of ten tons per day was taken out. Recently a steam engine has been erected to pump the water from the mine, and the number of miners will also, it is understood, be increased. The mine is apparently an extensive one, and the ore has been pronounced, by competent judges, to be of superior quality, it is hauled to Valley Station, on the Central railroad, the distance being little over a mile, where it is shipped to Bethlehem, Pennsylvania.

Michigan.

The Lake Superior *Mining Journal* of May 25th reports shipments of ore as follows: The Jackson Iron Company, Samuel Peck Agent, has shipped, to the 25th inst., inclusive, 1,934 gross tons ore. The Lake Superior, 3,433; the New England, 193; Marquette, to the 19th, inclusive, 758; The Cleveland, to the 19th, inclusive, 404. J. C. Morse is the Agent for the Marquette and the Cleveland Companies. The receipts over the Bay de Noquet Railroad to the 19th inst. are: 5,917 tons ore, and 4,618 tons pig iron.

New Hampshire.

According to a report of Dr. Hayes, State Assayer of Massachusetts, the gold mines of New Hampshire are found to yield, per ton, $867 in gold; the mixed quartz, talcose slate, gozzan, pyrites, etc., yields, upon analysis, $310.42 per ton.

Missouri.

The Virginia lead mines, in Franklin county, are being re-opened, and it is stated that copper and iron have been found near by.

British Columbia.

A despatch dated New Westminster, May 7th, says: The latest news from Big Bend mines is to the 1st inst. New diggings have been struck on Clemens Creek, and $9 to the pan taken out. The snow is too soft on the mountains yet for packing with animals, and Indians are hard to get to pack freight at 60 cents per pound. There is a great reduction in the price of provisions at the lake, in consequence of the large amounts arriving, which it is impossible to get packed into the mines. Flour, at Seymour, is sixteen cents a pound, and in the mines forty cents. Building is going on briskly at Seymour. Fourteen boats arrived at Gold Creek, up the Columbia river, in one day, loaded with men and provisions. Hundreds of boats are reported on the way up the river with miners and provisions. The steamboat Forty-niner had arrived at the head of Arrow Lake, on the 15th ultimo, with 250 miners; all the passengers were landed, and the boat returned for more miners. Slate claim, on Clemens Creek, is said to be worth $10,000. Hudson Bay Company's steamboat Marten was expected to be launched on the 10th inst. It is rumored that the United States soldiers at Fort Colville had deserted and gone to the mines, taking their arms with them. Since the above, 40 boats arrived at the mines. Two new gold-bearing creeks, tributuries of French creek, have been discovered. The greatest confidence in these mines is now felt here. . . . The Dalles *Mountaineer*, of April 13th, says: Major Blake, late of Wells, Fargo & Co.'s Express, and Major Robinson, an experienced assayer, left the Dalles on Saturday last, for the Suswap country. These gentlemen go to superintend the working of a silver lode lately discovered there, and for which the British Columbia Gold and Silver Mining Company was recently organized in Portland.

Canada West.

The mining season on the North Shore of Lake Superior is likely to be a lively one. The Detroit Exploring Company, whose formation we have previously noticed, will send an expedition in a few days to Michipicoten, where they will commence operations early next month. The Batchewaning Company will also dispatch a force immediately to push forward their railway, and complete preparations for opening their mines on an extensive scale. An expedition, on Canadian account, has been sent to examine the iron mines north of the township of Palmer, with the intention of forming a company for the purpose of working them.

Oil Summary.

Pennsylvania.

The Oil City *Register*, May 17, has the following West Hickory oil items: A new well was struck Saturday morning, May 5th, on lease 124, Hickory Farm. It is 223 feet deep and through the second sand-rock, throwing out an oil of 45 gravity, to the handsome amount of two hundred barrels per day. No. 128, which was once so famous for its yield of heavy oil, 35 gravity, has been retubed and the pumps set at work again. After several days spent in exhausting the salt water, an oil of 40 gravity was produced, with a yield of 50 bbls. per day. . . . Another strike has lately been made made on Little Beaver Creek, a short distance below the mouth of Island Run, on lands belonging to the Sandy and Beaver Oil Company, and on a lease taken by T. Blackmore, Kerr, Cain and others. This well is reported to flow about forty barrels of oil per day. The excitement there now is greater than ever before. . . . . Smith's Ferry, which has lately been the cause of so much excitement, is situated on the Ohio River, 40 miles below Pittsburgh. There are 70 wells sunk here, the total production of which does not exceed 350 barrels per day. The oil is of an amber color, and can be used for illuminating purposes without refining. Refiners, however, buy it to mix with other oils. . . . . At various points along Oil Creek extensive developments are in progress. The *Register* says: The Rynd Farm Oil Company are putting down a number of new wells on different parts of their farm. Mr. J. R. Mitchell, the Superintendent, is the right man in the right place. A number of wells have been tested lately on this farm, all of which promise fair. . . . . On the Tarr Farm quite a reaction has taken place in consequence of the success attending the use of the torpedo in various wells. Several good wells are now producing on Miller Run, and bluff territory is generally sought for. Some of the wells were increased by the use of the torpedo from a production of 10 barrels per day to 40 barrels. The Tarr Farm may be justly classed as one of the most reliable and largest producing oil farms in Venango county. The present production is estimated at from 850 to 900 barrels per day. At the time of our visit the Phillips Well had stopped temporarily. The bluff wells were nearly all producing. . . . . The Andy Johnson Well has commenced to flow at the rate of about 150 barrels per day. This well is on the lease of the Pit Hole Creek Petroleum Company on Copeland Reserve, and is the property of the Pit Hole Consolidated Company. . . . . The Pit Hole *Record* says a new well has been going down on Lease 54, T. Holmden Farm, on which lease the celebrated Pool Well is situated.

Ohio.

The Overton County Oil Company has struck oil. Their well in Overton county, Tennessee, is discharging 600 bbls. per day of the very best quality of oil. . . . An extensive Petroleum Refinery is to be erected in Nashville by parties from Marietta, Ohio. The increasing importance of the Cumberland oil wells renders such an establishment necessary. . . . . Marietta and Columbus Oil Company have a good well on White Oak. It has been pumping for a week, twenty barrels per day of the first-class lubricating oil. The well is about 500 feet deep.

California.

The Humboldt *Times* of April 7, says the Jennings Oil Well Company have sunk their well ninety-four feet, and struck a hard sand rock, which yields an unmistakable show of oil. The well of the Oil Creek Company is down one hundred and seventy feet, and the prospects are said to be very encouraging. The Fortuna Company have received a large amount of machinery for the prosecution of operations at their well on Bear river. . . . . The oil well at Oil Center, Colusa county is down four hundred and sixty feet, and has thus far cost $40,000.

New York.

A well at Balston Spa, N. Y., is now 580 feet in depth, having already produced gas and mineral water. The tools are now in a sort of black substance, soft and oily.

Georgia.

It is reported that Dr. Rogers of the Georgia Petroleum Company struck oil near Gadsden, at a depth of 240 feet.

West Virginia.

At the King Well, on Mill creek, six miles up Elk river, the New World Company are obtaining a small yield of oil. . . . . The McLure Well in Campbell's creek above Charleston is producing oil.

Canada.

There is a great oil excitement at Bothwell, Canada. The Rock River well is flowing at the rate of one hundred barrels a day, and the Wentworth well twenty-five barrels. Other companies have made large strikes. During the week ending May 26, 1,218 barrels of oil were shipped. . . . . Dispatches from Petrolia report two more strikes of oil, making six wells started during the week. The aggregate yield of the thirty-two wells at Petrolia is given at about 1,000 barrels per day. . . . At the Bohn & Prince well there are 1,200 barrels tanked and they are sinking a large one in the ground that will hold 1,000 barrels. . . . . There are now about fifty pumping wells scattered over a developed territory of nine square miles at Bothwell.

Wad: A Manganese Ore.

This ore has been described by Prof. Henry How, in an article published in the "Transactions of the Nova Scotian Institute of Natural Science." It is a black earthy substance, which is found in rounded lumps and grains. It was sent from Parrsborough, and from another locality to the east of Halifax, where it is found in lumps mixed with stones. The sample examined contained a great deal of water, and, when dried, 56 per cent. of binoxide of manganese, with traces of cobalt, which are usually found in this species. Neither of these would be valuable as ores of manganese, but they would probably serve as paints. But manganese is often mixed with bog-iron ore, and then forms deposits of a brown or chocolate color, called ochres or mineral paints. The paints of Bridgewater and Chester furnish examples. In the first, Prof. How found only eleven per cent., and in the second about twenty per cent., of binoxide of manganese. It is said to be useless to send to the English market ores containing less than 60 per cent., binoxide.

Improvements in Gun-Cotton.

Gun-cotton is now made into ropes for storage, and kept under water. When an order is received at the manufactory, a few hours suffice to send the cotton on its way. It has been found that by making the ropes with air channels through the mass the cotton explodes almost instantaneously, and is as violent in action as the strongest fulminates. Charges for guns are now made in two parts—an exterior composed of cotton of loose texture, the ignition of which starts the ball, and an interior of denser material, which supplies the gas necessary to keep up the constantly accelerating speed of the ball. The result is a great gain in initial velocity. Compared with gunpowder in an Enfield rifle, the cotton gave a trajectory having an incurvation of 3 1-6 inches, and the powder 3 3-8 inches in the first 100 yards.

The Denver (Colorado) *News* asserts that large quantities of petroleum have been found in that State.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Albion		$ 300,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Alpe	100,000	250,000	Illinois Central Dist., Col.	J. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barett, 13 Doane, Boston.
Atlantic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.	
American Flag	60,000	600,000	Nevada Dist., Col.	H. Foles, 71 B'way, N. Y.
Astor	100,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado.	New York.
Bates & Baxter			Colorado	New York.
Bay State	240,000		Colorado.	Lem'l Bangs, Boston
Boston	100,000	500,000	Colorado.	F. W. Capen, 44 Ex. Pl. N. Y.
Black Hawk	50,000	5,000,000	Gilpin co., Col.	D. Littlejohn, St John, N. Y.
Bosom		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bodwell	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, St John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Ariz.	O. H. Conover, 219 Dock st., Phil.
Barrongh's	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannock, Montana	64 Liberty, N. Y.
Bullion Consol.	200,000	200,000	Summit and Clear Creek, Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co., Col.	J. P. Whitney, 19 Lindall, Boston
Cancilla				A. Call, 7 Phœnix B'l'g, Boston.
Chem. Gold & S.				64 B'way
Ch. Un. Gold Co.				64 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston.
Circe	5,000	500,000	Colorado	W. E. Lawton, St John, N. Y.
Central Gold M.	2,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	16 Exchange Pl., N. Y.
Chandiere	100,000	500,000	5,000 A Famine Riv. C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Ely, 7 Trav'r B'l'g, Boston
Colorado Boston			Colorado	R. C. M'Laughlin, 40 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York
Columbia	20,000	2,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Consol. Gregory	50,000	5,000,000	Gregory Dist., Col.	30 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 35 Wm., N. Y.
Copelinskey	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrigan's	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corydon	150,000	2,500,000	Gilpin co., Col.	16 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col.	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 423 Walnut, Pa.
Day & Bushnell	500,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
De Lacy		10,000,000	Chaudiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Dewey	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 Fr'klin, Bos'n
Downieville	500,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Dorset			Chaudiere River, C. E.	F. McKinsey, 59 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Branch	100,000	200,000	Bannock City, Montana	J. Gallagher, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin.	208 S. Fourth, Phila.
Empire	250,000	5,000,000	Clear Creek, Col.	H. K. Gates, 191 B'way, N. Y.
Empire Mill & M.				O. F. Griffin, San Francisco.
Esmeralda			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	30,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. B'g, Bos.
Famine Fall	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,200,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. E. Jackson, 18 Phe'x B'g, Bos'n.
Gilpin				C. W. Gallonpe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E.	W. H. Adams, 19 Broad, N.Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold River				W. H. Cheesman, 9 Central, Bos'n.
Gold Hill	50,000	500,000	Colorado	W. T. Fustis, Boston.
Gold Mountain	100,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum., Highl'd & Mill'd D.	Mor. J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	200,000	2,000,000	Colorado	F. F. Roelfson, 78 & 80 B'way, N. Y
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	E. Kenneys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelofson, 78 B'way, N. Y.
Halifax				A. Case, 7 Phœnix B'l'g, Boston.
Harmony				Demas Barnes, 21 Park Row.
Her'it'ge Ranch	30,000	300,000	El Dorado, Cal.	
Hope	80,000	2,000,000	G'ld Dirt Lode, Gilp. co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	500,000	Clear Creek co., Col.	J. O'Neill, 23 Wm. N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia.	W. F. Shirley, 137 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y.
Kent				G. H Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H Fales, 71 B'way, N. Y.
Liebig	200,000	1,000,000	Colorado	

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Lake Major	12,000	$600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado.	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	1,000,000	Colorado.	W. R. Lothrop, 172 B'way, N. Y
Massachusetts	250,000	1,200,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x B'l'g, Bos.
Merchants	30,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Bse., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k. Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 23 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col.	A. L. Guerber, 54 Wm, N. Y.
Monte Christo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil.
Montezuma	100,000	500,000	Colorado.	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho.	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & San			Calaveras co	606 Mont, San Francisco.
National	500,000	5,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near Santa Fe	
New Gregory				W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon P't, Land. co. Nev.	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada.	71 B'way, N. Y.
New York of Col	100,000	1,000,000	Colorado.	F. E. Roelfson, 74 B'way, N. Y
N. Y. & Nevada	100,000	1,000,000	Nevada.	J. J. Osborn, 30 Pine, N. Y.
N. Y. G. Min'g	100,000	1,000,000	Colorado.	F. E. Roelolson, 78 & 80 B'way.
N. Y. & Eldor'do			Nevada.	106 B'way, N. Y.
N. Y. & Idaho			Idaho.	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada.	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho.	6 Pine, N. Y.
N. Y. & Oro Fino	10,000	1,000,000	Owyhee co., Idaho.	137 Broadway, N. Y.
N. Y. & Reese R			Nevada.	New York.
N. Y. & Renfew				2 Murray, N. Y.
N. Y. & Washoe			Nevada.	New York.
North Clear Ck	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia.	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co, Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston.
Ophir	62,500	625,000	on Comstock Lode, Nevada.	Moses A. Hopkock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos.	23 Nassau.
Peck				E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip			Buena Vista Dist., Nevada.	15 Nassau, N. Y.
Phila. & Color'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're	200,000	1,000,000	Colorado	W. H. Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado.	J. S. Lyon, 69 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Prince Albert				W. H. Cuessman, 9 Central, B'stn.
Quaker City			Ind't D't. G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Rancho C'k	10,200	1,200,000	Pine Wood Dist., Nevada.	18 Broad, N.Y.
Realito		1,000,000	G'd Hill D., Storey co., Nev.	117 B'way, N. Y.
Reese River Pr'l	100,000	1,000,000	AmadorDist., Lander Co., Nev	Elijah Alliger, 67 Wall, N. Y.
Renfrew				W. Stockbridge, 74 F'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant, Jr., 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y.
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	(Humb't Starr, Pr. R. D. Humb't co., Nevada.	R. S. Miller, 49 William, N. Y.
Silver Wave	300,000	3,000,000	Reese riv. Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'mbee	125,000	2,500,000	Colorado.	G. A. Lathrop, 4 Broad, N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev.	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Lodge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y.
Standard	50,000	500,000	Gregory Dist., Col.	T. A. Mitchell, 70 B'way, N. Y.
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk				Carlos Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stafford				C. E. Jackson, 15 Central, Boston
Tascher	100,000	1,000,000	Colorado.	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado.	Wm. E. Farish, 155 B'way, N. Y.
Trinado			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way.
United States	75,000	1,500,000	Colorado.	J. P. Stevens, N. Y.
University				31 Nassau, N. Y.
Victoria				W. H. Chessman, Central, B'stn.
Virginia City	250,000	250,000	Nevada.	J. B. William, 78 & 80 B'way.
Wauba Yuma	600,000	6,000,000	Arizona.	35 William, N. Y.
Waddingham	24,000	600,000	Alturas co., Idaho.	Jas. K. Selleck, 157 B'way, N. Y
Waverley				J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado.	25 William, N. Y
Wilson & Cass			Colorado.	New York

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	40,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	50,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Cuba	110,000	550,000	Macomb T. St. Law. co., N. Y.	Bev'l'y S. Merrill, 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	100,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson				65 Wall, N. Y.
King's Hill	10,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	4 Secs. 3 & 36 T. 49 & 50 R., 4 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y.
Macomb	110,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y.
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., B'stn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Manhan				40 B'way, N. Y.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockein, 22 William, N. Y.
Oswegatchie				24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Boyd, 78 Cedar, N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y.
Rossie				24 Pine, N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau, N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau, N. Y.
St. Joseph	100,000	1,000,000		W. Williams, 6 Broad, N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange co., N. Y.	E. P. Ackerman, 48 Pine, N. Y.
Sussex	125,000	625,000	Sparta Town. Sus'x co., N. J.	F. H. Stow, 53 Cedar, N. Y.
Walkill			Orange co., N. Y.	W. A. Scott, 11 Wall, N. Y.
Warren			Warren, Gratton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 So. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Demmon, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev.	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac.	50,000	1,000,000	Humboldt T, Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill, Lander Co. Nev.	71 B'way.
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montana	55 Liberty street.
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Stoute, Jr., 155 B'way. N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	30,000	3,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street. N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev.	49 Liberty street. N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way. N. Y.
Cosmos	10,000		Owyhee Co, Idaho	157 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N Y.
East Bunsack	100,000	200,000	Bunsack City, Mont'na	J. Gallagher, 40 Ex. P., N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y. N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist., Nevada	57 B'way, New York.
Eldorado	500,000	2,500,000	San A 90 m s of Austin, Nev.	208 South Fourth street. Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis. Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st. N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,200,000		H. K. Gates, 191 B'way. N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montana	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis. Nye Co, Nev.	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way. New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal.	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 B'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way. New York.
Merchants	30,000	600,000	Altunas Co. Idaho	157 Broadway. N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway. N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	157 Broadway. N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 B'way. New York.
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway. N. Y.
Nevada	100,000	300,000	Mount inWells, D. Ch. co Nev	323 Walnut street, Phila.
Nevada	120,000	1,200,000	Nevada	E. L. Bolles, 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Ione City, Nye Co., Nev.	74 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N.	10 Pine street. New York.
New Y'k Dis'ct	50,000	5,000,000	80 m f'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev.	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N.Y. & Oro Fino	10,000	1,000,000	do. do.	157 Broadway, New York.
N. Y. and silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California Mexico	24 Pine, N. Y.
Ophir			On Comstock Lode, Nev.	
Pah Ranagat C'l	50,000	5,000,000	Nevada	26 Pine, N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street. New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	30,000	3,000,000	Pine Mount'n Dist. Nev.	E. K. McCulley, 100 B'way, N. Y.
Pioneer & Buskip			Buena Vista Dis., Austin, Nev	15 Nassau street. New York.
Prescott	50,000	2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador. D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten.	50,000	500,000	Lander County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario and Carmen	5,244	1,480,000	Sinaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Union, Humboldt Co. Nev.	L. G. Wilkin, 119 B'way, N. Y.
Silas Wright	60,000	600,000	Amador. D Lander Co. Nev.	18 Wall street. New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock, 62 B'dway. N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T Co	200,000	2,000,000	Alturas Co., Idaho	
Star Hill	20,000	1,000,000	Nevada	155 B'way.
St'h C'l'rk			Colorado	Canastota, New York.
Stephenson	500,000	1,000,000	18 m E of Ft. Fillmore	A. S. Kellogg, 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev.	10 Pine, New York.
Sterling City		1,200,000		New York.
Tarshish	12,000	1,200,000	Toryabee Range, Un. D., Nev	H. S. McCollum, 78 B'way. N. Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Tennis			San Antonio, Lower Cal.	San Francisco.
Toryabee	50,000	5,000,000	Pine W'd, Mu'tn Dis. Nev.	J. M. Brown, 157 B'way, N. Y.
Union & El Do	100,000	1,000,000	Mogul Silver Mu'tn	40 Park Row.
Upper Missouri		100,000	Montana	107 Broadway.
Vedder	21,000	2,100,000	Amador Dist., Nevada	L. G. Bingham, 80 B'way, N. Y.
Wauba Yuma	600,000	6,000,000	Arizona	35 William street. New York.
Washington	22,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
White Mountain			New Hampshire	111 Broadway, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Adventure,	29,000		Parts of Sections 35, 36, T. 51, N Range 38 W.,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000		1226 A in Secs. 6, 7, 18, T. 58, N R. 28, W Keweenaw co, Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Albany & Bost'n,	20,000		secs. 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Amity,	20,000		del Norte co., California,	8 Wall St., N. Y.
Algomah,	20,000		W½ S. 30, T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000		Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy g.d'y'd'l.,	20,000		E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31, 160 A.	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000		NW¼ Sec. 20, T. 57, R. 33, 160 A,	C. P. Dixon, 48 Pine St. N. Y.
Astor,	20,000		NW¼ Sec. 5, T. 57, R. 31 A. 160 A,	W. Boardman, 35 Court St., Boston.
Atlas,	20,000		NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000		W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000		SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Beaver,	20,000		NE¼ Sec. 32, T. 58, R. 31,	A. W. Boardman, Boston.
Bohemian,	20,000		E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N.Y.
Boston,	20,000			H. W. Warren, 60 City Ex., B'st'n.
Canada,	100,000		Brome co., Canada East,	H. P. Mount, 3 Hanover St., N. Y.
Carp Lake, M.,	20,000		T. 51, N. R. 43, W. S½ of N½ of N. Sec. 14, and E¼ S.E. 23, and NE¼ Sec. 23, 440 A,	W. H. Abel, 70 Wall St., N. Y.
Cascade, M.	20,000		SW¼ Sec. 9, T. 49, N. R. 39, W., in Ontonagon co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000		Sec. 14, T. 58, N. R. 31, W, Keewenah Point,	97 State, Boston.
Copper Harbor,	20,000		S½ Sec. 10, T. 58, R. 28, 320 A, Keewenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N. Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W,	J. Stuart, Jr., 25 Nassau, N. Y.
Cornwall,			Strafford, Orange co., Vt.,	D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way. N.Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000		Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston. S. M. May, 326 Walnut St., B'st'n
Delaware,	20,000	500,000		P. C. Blancan, 35 Wall St., N. Y.
Derby,			Ontonagon co., Mich.,	31 and 32 City Ex., Boston.
Dorchester,	20,000		800 A.,	S. J. Edwards, William St., N. Y.
Douglas,	20,000		E½ Sec. 30, T. 55, R. 3,	H Bigelow 4½ City Ex., Boston
Dudley,				A. Lawson, 70 State St., Boston
Eagle River,	20,000		T. 58, R. 31, Secs. 28, 29, 33, 34,	Ernest Sacchi, 82 B'way. N. Y.
Ely,	100,000	500,000	325 A., Richmond, Canada East,	J. S. McMullin, 423 Walnut, Phil.
Empire,	20,000		1798 A., Secs. 1, 2, 11, 12, T. 58, N. R. 28, W. K'w'n co., Mich.,	H. Shirley, 137 B'way, N. Y.
Eureka,	29,000		W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	F. W. Capen, 44 Ex. Pl., N. Y.
Evergreen Bluff,	20,000		NE¼ Sec. 6, T. 50, R. 38,	F. K. McCully, 157 B'way, N Y.
Flint Steel R.,	20,000		Sec. 11, 12, T. 50, N. R. 39, W.	F. Paul, 19 Phœnix Building.
Forest City,	20,000		320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	Boston.
Franklin,	20,000		SW¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	100,000		Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y.
Garden City,	20,000		SW¼ Sec 60, N. W. Sec. 59, T. 58, N. R. 31 W,	R. H. Howe, Chicago.
Girard,	20,000		600 A. Sec. 15, T. 58, N. R. 28, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000		SW¼ Sec. 35, R. 34, W,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000		SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, R. 329 A., Ontonagon,	J. M. Cooper, 24 City Ex., B'st'n.
Hamilton,	20,000		SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14¼ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000		SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston. do. do. do. do.
Hanover,	20,000			
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston.
Henwood,			Michigan,	
Hope,	20,000	50,000	240 acres in T 57, R 32, Kw co	19 Nassau St., New York.
Humboldt,	20,000		Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n
Hudson,	20,000		ontonagon co.,	P. C. Blancan, 35 Wall St., N. Y.
Huron,	20,000		Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Isle Royale,	20,000		NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000		SE¼ Sec. 1, W½ of SW½ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000		Secs. 25, 30, 36, T. 51, N. R. 43, and 44, W., Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000		Part sec. 18, 19 entire, 30, 31,	Fred. Beck, 43 City Ex., B'st'n.
Merrywether,	20,000		Secs. 9, 19, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000		680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Manhattan,	20,000		W½ Sec. 11, NW¼ Sec. 14, T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N.Y.
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000		SW¼ Sec. 7, T. 50, N.R. 38, W,	J. M. Cooper, Pittsburgh.
Mesnard,	20,000		NE¼ Sec. 24, T. 55, R. 34,	L. Burr, 12 Phœnix B'gs, Boston.
Melones & Stan.,			Calaveras co.,	606 Mont St., San Francisco
Minnesota,	20,000		Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Merrimac,	20,000		NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills, 284 Pearl St., N. Y.
National,	20,000		Sec. 16, T. 50, R. 39, W. 1,988 A.	J. M. Cooper, Pittsburgh.
Native,	20,000		Keweenaw Point, Michigan,	
Nashua,	50,000	100,000	320 A. N. Ontonagon,	W. F. Hardy, 27 City Ex., B'st'n.
Nebraska,	20,000		NE¼ Sec. 12, T. 50, and other lands,	S. W. J. Webb, 54 Wall St., N. Y.
Nequakett,	20,000		Sec. 26, T. 51, R. 43,	G. S. Frost, Detroit.
New York,	20,000		240 A. SE¼ Sec. 10, E½ NE½ Sec. 15,	H. W. Nelson, 24 City Ex., B'st'n.
New Barre,			Baltimore,	R. Roberts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St., N.Y
New Devon,				T. H. Belt, Jo, do. do.
North Western,	20,000		W½ Secs. 24, 25, 26, E½ Secs. 26, 35, T. 58, N.R. 31,	17 William St., N. Y. J. M. Cooper, Boston and Detroit
Norwich,	20,000	500,000	Secs. 11, 12, T. 40, N.R. 39, W. and other lands, 1,300 A.,	P. C. Blancan, 35 Wall St., N. Y.
Ogema,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 35, W.	G. E. Lellingwell, 7 Pine, N. Y.
Ontonagon,	20,000		631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland, Ontonagon.	G. Hart, 11 Pine Street, N. Y. William D. Williams, Michigan.
Ont'n'g'n, Mass.	20,000			C. Windsor, 69 Wall St., N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	
Penn. Manuf'g.,	20,000	1,000,000	4,520 A. Secs. 13, 14, 15, 24 ½ Secs. 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	S. M. Day, 326 Walnut St., Phil.
Pewabic,	20,000		W½ Sec. 25, T. 55, N.R. 34, W.	C. Emery, 30 State, Boston.
Pitts. & Boston,	20,000		Ts. 58, 57, N. R. 31, 32, W. 12,405 A.	H. A. Johnston, Pittsburgh.
Pontiac,	20,000		SE¼ Sec. 13, T. 55, N. R. 31, W.	C. Emery, Kilbey St., Boston.
Portage Lake,	20,000		Houghton co. Michigan,	22 William St., N. Y.
Prescott,	100,000	1,000,000	Central Arizona,	69 Broadway, N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW¼ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20,000		640 A. Sec. 14, T. 58, N. R. 28, W. Kewenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincy,	20,000		Sec. 26, T. 54, N. R. 34, W.	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8,000	200,000		H Baldwin, 70 Wall St., N. Y.
Reliance,	20,000		Secs. 21, 22, 27, T. 58, N. R. 28, W. 10,785 A.	H. K. Thomas, 11 Wall St., N. Y.
Rochester,	200,000	500,000		J. A. Ferguson, 8 Wall St., N. Y.
Ridge,	10,000		Sec. 35, T. 51, R. 38, W.	51 Exchange Place, N. Y.
Rockland,	20,000		S.c. 11, T. 50, R. 39,	S. J. W. Barry, 71 B'way, N.Y.
Resolute,	20,000		1,120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich,	
St. Mary,	20,000			E. Beck, 45 City Ex., Boston.
St. Margaret,	200,000	1,000,000	Canada,	E. B. Sutton, 43 Pine, N.Y.
Sharon,	20,000		Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20,000		SE¼ Sec. 36, T. 55, R. 34, W,	S. J. Edwards, 22 Wm. St., N. Y
South Side,			SE¼ Sec. 34, T. 55, R. 34, W,	H. W. Nelson, Boston.
Societe Fran'se,	10,000		T. 58, 59, N. R. 28, 30, W,	Copper Harbor.
Suffolk,	20,000			Carlos Cobb, 22 William St., N.Y
Superior,	20,000		W½ Sec. 14, T. 50, N.R. 39, W.	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000		Secs. 25, 26, R. 50, R. 36,	H. W. Nelson, Boston.
Union,	20,000	500,000		A. S. Kellogg, 22 Pine St., N. Y
Ural,			Wisconsin.	17 William St., N. Y.
Vulcan,	20,000		1,120 A. Secs. 7, 17, 18, T. 58, N R. 27, W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phila
Victoria,	20,000		Secs. 20, 29, 30, 34, 34, T. 50, R. 39, and other lands.	L. W. Clarke, Boston.
W. Minnesota,	20,000		Secs. 17, 18, 19, T. 50, N. R. 39, W.	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts.	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Wauba Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y

S, means section; T, township; R, range.

AMERICAN
Journal of Mining.

[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

OFFICE, 37 PARK ROW, NEW YORK.

Published Every Saturday Noon.

TERMS:

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy -	$4 00	One line [Nonp.] 1 inser'n.	$0 50
Six months, one copy -	2 25	One Square, 10 lines, one do	2 00
Three months, one copy -	1 25	One Square, do. four do.	5 00
Single copy - -	10	One Square, do. one year.	40 00

Canadian subscribers 25 cents extra for postage.

☞ Specimen copies sent free.

☞ Liberal reductions to permanent advertisers.

DESIGNING, WOOD ENGRAVING,
LITHOGRAPHING and JOB PRINTING
Executed in elegant style, on reasonable terms.

Address **WESTERN & COMPANY, Proprietors,**
No. 37 Park Row, and No. 145 Nassau Street, New York City.

AGENTS,
AUTHORIZED TO RECEIVE SUBSCRIPTIONS AND ADVERTISEMENTS.

PENNSYLVANIA—S. E. COHEN, Philadelphia.
COLORADO—GEO. TRITCH, Denver City.
" W. S. STANLEY, JR., P. M. Mill City, Clear Creek Co.
" R. G. KELLETT, Central City.
" R. C. MILES, P. M., Golden City, Jefferson county.
CALIFORNIA.—W. E. LOOMIS, San Francisco.
MEXICO.—B. C. BARKSDALE & Co., No. 13 Primera Calle de San Francisco.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage.

For Europe.

At the request of numerous subscribers, we print an edition of the JOURNAL early on Saturday morning for the European mail.

NEW YORK, SATURDAY, JUNE 9.

Contents of this Number.

EDITORIALS.—American Coal—Status of American Science—Horace Greeley on Sodium Amalgam—Grooving Broadway—A Brazilian Exhibition—South American Copper.

ORIGINAL PAPERS.—SALT. No. Four, by Professor Engelhardt.

SCIENTIFIC MEETINGS.—Society for the Advancement of Science and Art.

THE ERICSSON CALORIC ENGINE, described and illustrated.

MISCELLANEOUS.—A Century of Science—Columns of Steel—Improved Furnaces—Improvements in Gun Cotton—Peace on the Plains.

SPECIAL SCIENTIFIC BREVITIES.

MINERAL AND OTHER OIL-DITS.

ALL SORTS.

MINING COMPANY STATEMENTS.—DIVIDENDS.—MEETINGS.

MINING SUMMARY.—Latest news from California, Nevada, Montana, Colorado, Arizona, Idaho, West Virginia, Utah, New Jersey, Michigan, New Hampshire, Missouri, British Columbia, Canada West.

OIL SUMMARY.—Latest news from California, Pennsylvania, Ohio, New York, Georgia, West Virginia, Canada.

PATENT CLAIMS.—The latest allowed to Inventors of Mining and Milling Machinery, etc.

MINING DIRECTORY.—Gold, Copper, Lead and Silver Mining Companies—Names—No. of Shares—Capital Stock—Situation of Mine—Name of Secretary and Place of Business.

MARKET REVIEW.—Finances, Stocks, Metals, Petroleum, etc.

NEW YORK AND BOSTON DAILY QUOTATIONS OF MINING AND OIL STOCKS.

NEVADA STOCKS.—Latest advices by Mail and Telegraph.

NEW YORK METAL MARKET.

COPPER SALE AT SWANSEA, ENGLAND.

LONDON METAL MARKET.

CHEMICALS USED IN THE VOLUMETRIC ASSAY—Prices, etc.

ASSAYING IMPLEMENTS.—Prices.

AMERICAN COAL.

The subject of the American coal fields has created so much remark lately, particularly with respect to Chancellor Gladstone's statement—that the coal of this country possesses so much anthracite that it is not fit for steam or for smelting purposes—that we think some facts bearing upon the subject may be of interest. There are two objects to be gained by the use of combustion, viz.: heat and light; but both cannot be obtained to perfection by the same process. Of these, heat is the more useful agent, under the circumstances in which men are placed. The materials commonly used for obtaining heat are called fuel. They appear to be of vegetable origin. The trees themselves were evidently first generally used, then peat, and in the seventeenth century coal—although Marco Polo in his travels relates that:

"In the mountains of Cataja, [Cathay, or China,] a kind of black stone is dug up which, when laid upon the fire, burns like wood, and, when once ignited, continues to burn for a long time, so that if placed upon the fire in the evening it will burn during the whole night. The stone, when first ignited, produces a small flame like other coal (charcoal.) It then continues to glow, and gives off much heat."

Common coal, as we have said, has been in general use since the seventeenth century. During our own times the lower formation, anthracite, has also been largely used in connection with common—and more recently, oil, produced from cannel and cannelite has been used as an auxiliary. Heat is obtained from fuel by the chemical combination of oxygen with the carbon contained, and the consequent decomposition of both substances. Now, as any quantity of oxygen can be supplied by the air, the practical value of coal would seem to be ascertained by determining the quantity of carbon contained therein, or the quantity of oxygen required to assist in the process of combustion. Such, however, is not the case, for there are many modifying circumstances at work. It is found that in furnaces double the quantity of air must be admitted for combustion than is actually combined with the carbon. This extra quantity of air drives off part of the carbon—disengaged by the heat and which is not combined with the oxygen—either in the shape of volatile products, gases, or of non-volatile products, such as smoke or soot. Also during combustion, water is formed, which absorbs heat. Then, again, the watery part of fuel occasions usually a still greater loss. For instance: Pennsylvania anthracite contains, 1.34 per cent. moisture; Virginia bituminous, 1.64; Maryland free burning, 1.25; foreign bituminous, 2.16; willow, fresh cut, 26.00; oak, 34.7; white fir, 37.1; and black poplar, 51.80. This moisture must, of course, be heated at the expense of the fuel; while, on the contrary, water introduced in the gaseous state, decomposes when in contact with red-hot coal, and produces extra heat. Again, the length of time during which the combination of the oxygen and carbon takes place, also greatly influences the practical effect. For instance, 1 lb. of lime-tree will heat 32.80 pounds of water from 32° to 212°, while 1 lb. oak-wood will heat only 31.82 lbs. to the same temperature; but the heat of the latter will continue much longer than that of the former. Experiments on the relative properties of different kinds of coal were made some years ago at the Navy Yard, Washington, with the following average result, 1000 representing the highest degree of excellence:

	EVAPORATIVE POWER OF EQUAL WEIGHTS OF COAL.	EVAPORATIVE POWER OF EQUAL BULKS OF COAL.	FREEDOM FROM TENDENCY TO CLINKER.	RAPIDITY OF ACTION IN EVAPORATING WATER.	FACILITY OF IGNITION OR READINESS WITH WHICH STEAM IS GOT UP.
Average Maryland free burning coal	1000	1000	395	880	682
Pennsylv a anthracite	977	986	1000	893	319
Penn. free burn g bit's	951	938	320	1000	914
Virginia bituminous	850	757	242	948	730
Foreign bituminous	801	741	331	948	1000

Sums of the relative values: Maryland free burning, 3249; Anthracite of Pennsylvania, 3335; Free burning bituminous coals, of Pennsylvania, 3220; Highly bituminous coal of Virginia, 2872; Foreign bituminous, 3027.

So, it will be seen at a glance, that for general heating purposes the anthracite coal—which Chancellor Gladstone affects to despise—is the most valuable, and the foreign bituminous the least so—the only excelling quality of the latter being the facility of ignition, or readiness with which steam can be raised. In this connection, it may also be interesting to show the relative quantities of carbon, as compared with oxygen and hydrogen, in the following substances:

	CARBON.	HYDROGEN.	OXYGEN.
Wood tissue	100	12.18	83.07
Peat	100	9.85	55.67
Lignite	100	8.34	42.42
South Staffordshire Coal	100	6.12	21.23
Steam Coal from the Tyne	100	5.91	18.32
Semi-anthracite from South Wales	100	4.75	5.28
Anthracite from Pennsylvania	100	2 84	1.74

Here we see that in Pennsylvania anthracite, the proportion is 2.84 parts hydrogen and 1.74 oxygen to 100 parts carbon, while English South Staffordshire coal contains 6.12 hydrogen and 21.23 oxygen to 100 parts carbon. Again, anthracite coal contains no sulphur, while all the English bituminous coal contains a considerable quantity; consequently, all other things being equal, anthracite iron should bear the same proportion to English iron as English coke-made iron bears to charcoal iron. That the anthracite coal, however, is not useless to iron smelters, is proven by the fact that about 500,000 tons of iron were smelted by it last year, notwithstanding the high wages, and some of it was sent to England. In the next issue of the JOURNAL OF MINING we shall have a little more to add as to Chancellor Gladstone's errors.

STATUS OF AMERICAN SCIENCE.

We heard it remarked the other day by the Secretary of one of our scientific societies, that Germany has more scientific works, and more men devoted exclusively to science, than any other country; that France has a considerable number of both, but fewer than Germany; England still fewer; while in our own country we may count, perhaps, but two such men in Boston, the same number in Philadelphia, and in our own city he knew of none. The average earnings of men in our country are at least one-third greater than in England; in England one-third greater than in France; in France one-third more than in Germany. But in the latter country, every petty State maintains its professors, and the professors, evidently, value learning itself as their principal reward. Thus, in Hanover, with a smaller population than New York State, and infinitely less wealth, the government pays fifty professors $800 to $1,800 each, and thirty professors $600 each, besides supporting libraries museums, observatories, picture galleries, etc. In wealthier France the government is not so liberal, and the scientific men somewhat less disinterested lovers of learning. In England, although it is true that such men as Faraday may be favored with a sinecure post—connected with one of those colleges founded in less wealthy times,—and allowed a moderate salary, so that the cares for bodily wants may not interfere with his public usefulness, still, on the whole, the scientific man must, as in our own country, look to the Patent Office for his chance of support, and to the dollars thence accruing, in place of his wand of honor. In fact, we are profiting by the expenditure raised from taxing the comparatively poor populations of Germany and France for the experiments and deductions which furnish the pabulum upon which the fierce ardor of our own population after inventions and applications, is fed.

In respect, more particularly, to mining, let us look at the comparatively unimportant kindom of Norway (not including Sweden). She has a population considerably smaller than New York State, and perhaps the dwellers in a single street in our city, possess wealth surpassing that of her whole population; yet she supports a mining department and college, which, as a matter of course, keeps itself *en rapport* with all the European scientific institutions, while the students furnish an intelligent little army of "prospectors," that is constantly and largely developing the mineral resources of the country. When the United States was chiefly an agricultural State, mining colleges and other scientific institutions were not necessary; but, during the last ten year, she has become the leading mineral-producing country of the world, and ought certainly not to be the most backward in scientific research. Is the cause of the want of favor for such institutions, a want of sympathy with theoretic science, and must we set it down as a fact that wealth and learning are so uncongenial that their marriage necessarily entails loss of affection and separation?

NEW MEXICO.

It is confidently believed and stated by those most competent to judge, that the mineral and metallic wealth of New Mexico is fully equal to that of

any of the other territories of the extreme West. Because little or nothing has been done to awaken public attention to her mines; because, also, of her peculiar geographical and political position, and the terrors of Indian warfare that have thus far hung like a pall over her prospects; because, moreover, California, Nevada, Colorado, British Columbia, Idaho, and Montana, have each in their turn, filled the ear of the world with their loud "Eurekas!" to the exclusion of less pretentious, but, perhaps, equally valuable domains; because, we say, of these things, and perhaps a want of energy in some of the inhabitants, the light of New Mexico has thus far been hidden under a bushel. But we learn from the Santa Fe *Gazette* that a change is taking place:

"Yankee enterprise has been set in motion in her mountains, and is making developments, the value of which cannot be denied. The attention of emigrants has been directed to this portion of Uncle Sam's possessions, and we have no doubt that the present year will bring us a large number of the hardy sons of toil, who will send to the East, from this Ophir, wealth in gold and silver that by them is now undreamed of."

That is as it should be. Let New Mexicans go to work with a *will*, develop their wonderful mines, send communications as to actual results to the JOURNAL OF MINING, and there will, some of these days, be as great a rush to their Territory, as there is now to Montana.

HORACE GREELEY ON "SODIUM AMALGAM."

On page 152 of this volume of the JOURNAL OF MINING, we had occasion to correct a San Francisco contemporary, relative to "Sodium Amalgam." Another candidate for correction now comes forward. The New York *Tribune* of June 5th, says:

"'Sodium Amalgam' is the name of a new explosive compound of California origin. The explosive power of one ounce of this material is said to be equal to that of twenty five pounds of gunpowder."

These three lines contain just three gross errors. Firstly, sodium amalgam is *not* an "explosive compound;" secondly, it is *not* of "California origin;" and thirdly, the explosive power of one ounce of the metal "sodium"—which is the only material in sodium amalgam that of itself is explosive—is *not* "equal to that of twenty-five pounds of gunpowder."

GROOVING BROADWAY.

For several days past the corner of Broadway and Chambers street has been crowded by persons examining Wardwell's "Double Gang Stone Channeling" machine, which, in connection with the Wood & Mann portable steam engine—both of them recently illustrated and described in the JOURNAL OF MINING—is about to be used in grooving the Russ pavement of Broadway. Thursday evening the channeling machine was run several times across the street, and did its work excellently; but from want of proper fuel for the engine, the trial was discontinued for that night. In our next issue we shall doubtless be able to record the amount of work averaged within a given period.

A BRAZILIAN EXHIBITION.

At Rio Janeiro, is to be held a National Industrial Exhibition, lasting from October 19th, to December 2nd, of the current year, a special space being devoted to the use of foreigners, who are to be supplied gratuitously with power to work machinery. The Brazilian authorities are said to be anxious to have American machinery well represented.

SOUTH AMERICAN COPPER.

It is alleged, on good authority, that orders have been sent to the Spanish fleet off Chili and Peru, to suspend further operations, and go into winter quarters. It is believed that during the interim, peace between the powers will be arranged. We trust so. We are not of those who desire to profit by the misfortunes of others, as would be the case were copper to rise, owing to a continued and effective blockade of Chilian ports.

The Pacific Railroad.

It is stated that 383 miles of the Union Pacific Railroad, west of St. Louis, has been completed, and that the work is being pushed with vigor.

Scientific Meetings.

[SPECIALLY REPORTED FOR THE JOURNAL OF MINING.]

SOCIETY FOR THE ADVANCEMENT OF SCIENCE AND THE ARTS.

Mr. S. De Witt Bloodgood recently read a paper on advantages to be derived from magnetic observatories. He said that magnetism had now become a familiar and most important study, bearing as directly on the interests of commerce as astronomy itself. He believed that a Magnetic Observatory would be of the greatest use in this city, and its cost, since we had now the experience of older institutions of the same kind to guide us, exceedingly small, and which, indeed, would be far over paid by the saving of one of the vessels and cargoes whose loss a derangement of compass, want of knowledge, and similar causes frequently occasioned. Such observatories have been founded in Great Britain, and its colonies in India, Canada, the Cape and Van Diemen's Land; in France and Algieria, in Munich, Prague and Gottingen. Three important characteristics of the effect of terrestrial magnetism upon the compass needle require to be noted. The differing force of this attraction—its variation from a true meridian, and its variation from a horizontal position. The magnetic condition of the Earth is indicated by these three forms of phenomena. The declination of the compass needle, or its variation from a true north and south line, has been known from the time of Columbus, and its variations since that period have been carefully noted. If the magnetic compass everywhere coincided with the geographical meridian, one-half of the difficulty and dangers of navigation would be obviated, but this is not the case. In France, the variation of the needle is about twenty-two seconds west, and at Greenwich twenty-four seconds. In 1657, the needle at London pointed due north, but at Paris it did not. The needle is now, and for some years has been, traveling eastward of north at a rate of five or six seconds a year, after having for a period of one hundred and fifty-eight years previous to 1818, traveled westwardly of north nearly two and a half points. Capt. Parry, in one of his Arctic voyages, found the needle had a westwardly declination of nearly nine points. Indeed so great were the variations that the use of the compasses was abandoned. Charts of these variations have since been constructed, and are in use by the more careful and skillful navigators. Could such charts be made entirely accurate they would obviate many of the dangers of navigation, and, perhaps, enable us to solve some interesting scientific problems. But to obtain these require much fuller and more extensive observations than have yet been made. Many other points of interest and value might also be determined bythese observations, as the causes of and laws which govern magnetic storms.

PNEUMATIC TRAFFIC.—During last Monday evening's meeting, it was stated that at the last session of the New York Legislature, a Commission was appointed to inquire into the best method of underground railway communication, and that Mr. Craven, who is on the commission, states that it is likely that an iron tubular tunnel will be recommended to be laid across the bottom of the river, between the mainland and New York city, within which a freight railway will run. It was considered that the pneumatic method of locomotion would be used, which is being followed with success in England. The principle, as most of our readers are aware, is to employ a car connected with a piston in an air tight tube; when the air is exhausted in front of the piston, the pressure of the air behind propels the piston, and consequently the car; when the air is exhausted behind the piston, the car of course is moved backward. It was considered that there would be no greater engineering difficulty in laying down the large exterior tube, than in laying down a similar tube for water supply.

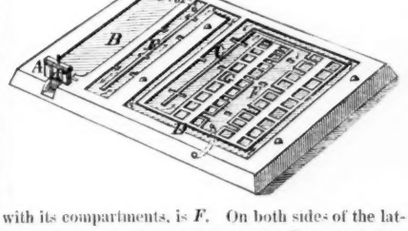
Original Papers.

WRITTEN FOR THE JOURNAL OF MINING.

SALT.—Number Four.

By FRANCIS E. ENGELHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

At present all the sea salt, with the exception of that made in Russia by the freezing process, is prepared by solar evaporation, of which I will now proceed to give a short description. In a well-selected spot on the sea beach a system of shallow ponds is dug, whose bottoms and sides are well clayed several inches thick, to prevent the salt water from percolating into the ground. The object of having these basins as shallow as possible is to expose the largest amount of the surface of the water to the evaporating influence of both the sun and the air. The first of these reservoirs, which is always the largest, occupying more than two acres of ground, and from two to four feet in depth, is connected with the ocean by sluices. At high water the gate is opened, and the basin filled with water, which, coming to rest in the basin, deposits all the mud and impurities held in suspension. When perfectly clear, the water passes gradually through a pipe into a second smaller, and more shallow pond, which is divided by several partitions into a number of small basins, in such a manner that it must flow from one into the other. When arrived in the last one of these small basins, it enters a narrow and shallow channel, sometimes over 16,000 feet in length, by which it is conducted into a third partitioned pond—the flow of the water being regulated during its entire passage by the attending workmen in accordance with the weather. The evaporation has now advanced to such a degree that all the sulphate of lime contained in it is deposited on the bottom and the walls of the pond. The concentration of the liquid is 1.116 when the sulphate of lime commences to separate, and 1.21 when all is removed. The cause of this separation is the presence of sulphate of magnesia in a more concentrated form, in which sulphate of lime is insoluble. After the entire removal of the latter, the water is conducted into two rows of shallow basins, where the actual crystallization commences, whence, as soon as it reaches a specific gravity of 1.263, it flows to the so-called crystalizing tables, which are never more than three inches in depth. Here it remains until the salts of magnesia commence to crystalize, and is then emptied into the sea, or into another reservoir, to be used for the manufacture of other salts, such as sulphate of magnesia, bromides, iodides, &c. The salt which covers the bottom of the crystalizing tables is scraped off from time to time, and formed into small heaps for drainage and for the separation of the chlorides of calcium and magnesium—the latter two substances absorbing moisture from the atmosphere in sufficient quantity to cause them to deliquesce. After these two objects have been accomplished, the smaller heaps are made into larger ones, and covered with straw, to prevent the injurious influence of rain. The following diagram shows a salt work of this kind. At *A* the water enters by the sluice into the first pond *B*. Thence it passes at *a* into the second reservoir *E* provided with the compartments before spoken of. The long, narrow channel enters the third reservoir *C*; and the fourth,



with its compartments, is *F*. On both sides of the latter are two rows of crystalizing tables *G*, connected by pipes with the compartments of the latter. The passage of the water is indicated by the darts in the diagram.

Both the quantity and the quality of the salt that may be manufactured by solar evaporation in the process described above, depend, of course, entirely on

the weather. If the summer is warm and dry, a large quantity of a superior kind is realized; while, during cold and wet summer months, only a small and impure article can be produced. Among the countries that manufacture sea salt in Europe, the principal is France, where, at Berre and Baynas alone, 80,000,000 pounds are annually prepared. The total amount of sea salt produced in the French Empire on its Atlantic and Mediterranean coasts, is more than 450,000 tons annually. Spain possesses large sea salt manufactories in the province of Catalonia and Valencia, and, indeed, most of her salt is derived from sea water. Portugal has long been celebrated for her St. Ubes salt. She also produces large quantities at the Cape de Verde islands. In connection with these islands, I may state that the English sailors were permitted to manufacture salt there after the marriage of King Charles II. with the Infanta of Portugal. In 1851 Portugal produced over 10,000,000 bushels. The former kingdom of Sardinia, including the island of that name, was a large producer of sea salt—more than 100,000,000 pounds were manufactured during 1850. The dominions of the Pope yielded, before the annexation of Sardinia, more than 60,000,000 pounds. The islands of the Mediterranean nearly all produce salt. Austria has large salt works on the coasts of her possessions at Venice, Trieste and Ragusa. The Crimea paid to the Russian treasury in 1851 over $260,000 taxes on her salt manufacture from sea water, and produced over 200,000,000 pounds. Egypt may also be mentioned among the sea salt producing countries. In Central America sea salt is manufactured on the Pacific coast in considerable quantities. The Dutch islands of Curaçoa and Buen Ayre, north of Venezuela, British Guiana, the islands of Margaritta, and most of the West India islands, are large producers of sea salt. Turks Island salt is well known in this country. Mexico possessed formerly large sea salt lagoons on her Pacific coast in the State of Oajaca, which were sold to private individuals by her former President, Santa Anna.* California manufactures salt at Los Angeles. Virginia manufactured sea salt as early as 1620, at Cape Charles; and in South Carolina the first was made by Nathaniel Johnson in 1689. New Jersey, Delaware and the New England States manufactured sea salt on their coast during the Revolutionary War and the War of 1812; but at present they have nearly all ceased. Florida manufactures salt, especially at Key West, since 1840; and Texas has salt works near the Rio Grande. Why more attention is not paid to the manufacture of sea salt in this country, with such an enormous extent of sea coast in parts at least as warm, during the summer months, as Spain and France, I will not discuss at length. The low tariff on salt, and the cheaper labor in most European States, are certainly some of the principal causes; nevertheless, if sea salt works were established, especially on the French plan, and economically worked, there is no doubt whatever that they would be sufficiently remunerative.

*Carmen Island (Gulf of California), belonging to Mexico, contains large salt deposits now being worked.—Ed. JOURNAL OF MINING.

MINING COMPANY STATEMENTS.

THE INTERNATIONAL SILVER MINING COMPANY OF PAH-RANAGAT DISTRICT, NEVADA. CAPITAL STOCK, $5,000,000; SHARES, $100 EACH.

According to the prospectus, the property of this Company consists of thirty one Silver Lodes, which amount to seventy five thousand lineal feet, situated in the Pah-Ranagat Lake Mining District, State of Nevada. $527 35 is the average per ton of ore from the various lodes of the Company. Thirty-one assays of ores from various parts of the district, average, per ton, $396 12. The advantages claimed by this Company are: "Unequaled extent and undeniable value of its lodes. Proximity to navigable rivers, economizing cost of working, in procuring supplies and shipping products. Salubrity of climate, permitting the prosecution of work through all the year. A supply at hand of water, salt, coal, timber and fire clay, heretofore unknown so close to valuable lodes. A proposed provision of sufficient working capital to make success absolutely within control of the Company, upon a basis more certain for safety and profit to subscribers for the working capital than any known by the officers of this Company. The commitment of the managers to the use of their best judgment and abilities, in seeking for the success of the Company." It is proposed to raise a working capital of 500 000 dollars, subscriptions payable in currency. Company's office, 26 Pine street, New York.

DIVIDENDS.

THE CENTRAL PETROLEUM COMPANY have declared a dividend of one per cent., payable at the office of the Company, 8 Pine street, New York, on June 20th next.

MEETINGS.

TEXAS GOLD MINING COMPANY OF COLORADO.

Office, 155 Broadway (Room 9), New York. Annual Stockholders' meeting for the election of Directors, 19th July.

MARKET REVIEW.

FRIDAY EVENING.

The price of gold is at about the same figure at which it was quoted last Friday, closing to-day at 140½; during the early part of the week it had reached 145½, but on receipt of favorable news from Europe on Wednesday fell to 145, and on Thursday to 142½, and to day to our forementioned quotation.

The loan market is easy and quiet at 6 per cent. First-class commercial paper in request at 6@7½ per cent.

Foreign exchange is dull. Commercial Bills at 60 days on London, 109@109½; bankers', 109¾@110; short sight, 111½@111¾.

The stock market is inactive, government stocks unusually so. Railroad shares lower. In mining stocks there is little change. Smith & Parmelee gold have advanced from $8 75 on June 24 to $9 25 paid to-day. Consolidated Gregory has declined from $11 65 asked on the 24 to $10 90 paid to day. Gunnel Gold—90c. asked on the 24, 75c. paid to day. Canada Copper has advanced from 75c. asked, to $1; Rocky Mountain Gold has fallen from $3 45 to $2 50 paid to day. Oil stocks, also, show little change. United States has got up the last few days from $3 to $5 60; Brandreth Run to $5 10.

From Mr. Secretary McCulloch's report, we observe that the amount of gold sold by the government, during the past month, was $35,430,000. He states: "The demand in February was met by the sale of some fifteen millions of dollars, at a premium of between thirty seven and thirty-eight per cent., after which the rate gradually declined to twenty-four and one-half per cent., but advanced again to near thirty per cent., beyond which point it was not deemed advisable that it should go, and as there was little commercial demand, no sales by the government were deemed necessary until unfavorable financial intelligence was received from Europe. Upon the receipt of this intelligence the demand became active, but it was met without a heavy depletion of the Treasury. On the receipt, however, of the disasterous news by the Cuba, the demand assumed a serious character. This news reached New York late in the afternoon, but before the stock board had closed. It was then too late to obtain instructions from this Department, and sales were resolutely continued amid unparalleled excitement. Had there been time for Mr. Van Dyke to advise me in regard to the news brought over by the Cuba, and to receive my instructions, the probability then is that sales would have been suspended before so large an amount of coin had been disposed of, but in the light of fact since developed, I concur in the opinion expressed by him that a suspension of sales before the demand had been freely supplied would have added to the excitement, and resulted in a panic which would have produced serious and extensive disaster. I received the intelligence of the unexpected heavy sales with regret, but I have since become satisfied that the action of the Assistant-Treasurer and his agent, was not only courageous but judicious."

The market prices of metals have advanced, not from any greater demand, but rather in sympathy with gold.

Iron.—Pig is higher and the supply not large. Quotations have advanced about $2 per ton since our last; the present price being American No. 1, $43@$45; Glengarnock, $45@$46; Eglinton, $43@$43 50; Gartsherrie, $46@$47. Store prices are $5 per ton higher than last week.

Steel.—Demand somewhat dull, with considerable stock in store.

Lead.—Pig is steady with slack demand; bar, sheet and pipe in somewhat better demand.

Tin—Quiet; prices nominal. Tin plates are quoted ¼c.@1c. higher.

Copper.—American ingot in rather more active demand, at improved prices. Sales of Baltimore at 31c., and Lake at 32c.@33c.

Petroleum.—The demand to-day for crude is fair, but the market is rather heavy. Refined is scarce, in demand, and firm; sales of 2,000 bbls. Crude at 26c., 500 bbls. Standard White (Cozzen's) at 43c., 500 bbls. do., buyer July, at 44c., and 500 do., buyer August, at 46c.

Coal.—There is no change to report in the market this week. We refer our readers to an article on coal in our present number.

The following is a statement of coal transported on the Delaware and Hudson Canal for the week and season ending June 2, 1866:

	WEEK.	SEASON.
Delaware and Hudson Canal Company	44 400	333 070
Pennsylvania Coal Company	1,302	5 509
Total tons	45,702	338,579

For the same period last year, 1865:

	WEEK.	SEASON.
Delaware and Hudson Canal Company	29,434	166,962
Pennsylvania Coal Company	117	14 523
Total tons	29 551	181 485

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

ANTIMONY	Regulus, ₱ lb	$ 00 12½	@$ 00 13
	Crude	.. ..	.. ..
BORAX		.. 33	.. ..
BRIMSTONE		67 50	72 50
COPPER	Ingot, Lake Superior, ₱ lb., cash	.. 32	.. 33
	Baltimore	.. 31	.. ..
	Pig Chili	.. 28	.. ..
	Bolts	.. 43	.. ..
	Braziers	.. 42	.. 43
	Sheathing	.. 40	.. ..
	Yellow metal	.. 32	.. ..
IRON	Pig.....No. 1 Scotch, ₱ ton	43 50	47 00
	No. 1 American	43 00	45 00
	No. 2 "	40 00	42 00
	No. 2 Charcoal	.. ..	.. ..
	Bar.....Swedish, ordinary sizes	100 00	.. ..
	Amer. and Eng. refined	115 00	135 00
	" " common	105 00	110 00
	Rails, American currency	.. 85	.. ..
	" English gold	.. 56	.. ..
	Horse shoe iron	140 00	150 00
	Rods 5-8@3-16rd. and sq	117 50	175 00
	Band	145 00	.. ..
	Nail rods, 5-8 and 3-16	122 50	185 00
	Hoops	145 00	215 00
	Sheets, Russian, ₱ lb	.. 28	.. 30
	" English "	.. 6¼	.. 9
	" American "	.. 25	.. 25½
	Boiler Plates, English	.. ..	.. ..
	" American	.. ..	.. ..
STEEL	Best cast in bars, war	.. 24	.. ..
	Best sheet cast, "	.. 24	.. ..
	Best cast circular saw plates 46 in	.. 30	.. ..
	Double shear steel, war	.. 24	.. ..
	Single " "	.. 21	.. ..
	Montague & Co. C. S., in bars	.. 21	.. ..
	Round machinery cast	.. 16	.. ..
	Best German	.. 16	.. ..
	Government German	.. 15	.. ..
	Eagle German	.. 15	.. ..
	(L.) Blister, war	.. 22	.. ..
	W. Jessop & Sons, blister, war	.. 18	.. ..
	Double refined	.. 26	.. ..
	Stone Axe shapes	.. 26	.. ..
	Common blister	.. 15	.. ..
	2d quality sheet	.. 21	.. ..
	3d quality sheet	.. 18	.. ..
LEAD	American, per 100 lbs	.. ..	.. ..
	German	8 50	8 75
	Spanish	8 50	8 75
	English	8 50	8 75
	Bar, per 100 lbs	9	.. ..
	Pipe and sheet	11½	.. ..
TIN	Banca Gov., per 100 lbs. gold	21	.. ..
	Straits	19½	19¾
	English	19½	.. ..
TIN PLATES	IC 10-14 prime charcoal	14 50	.. ..
	IX 10-14 " "	17 25	.. ..
	IC 12-12 " "	15 00	.. ..
	IX 12-12 " "	17 75	.. ..
	IC 14-20 " "	15 50	.. ..
	IX 14-20 " "	18 25	.. ..
	IC 14-20 Roofing ch. 1st	14 00	.. ..
	IC 14-20 " " 2d	13 00	.. ..
	IC 14-20 " Coke	16 75	.. ..
	IC 10-14 Coke	11 00	13 00
SPELTER	Lehigh, per lb., currency	.. 10¼	.. 11
	Foreign " gold	.. 7	.. 7¼
ZINC	Mussulman & Amer	.. 13	.. 14
SOLDER	No. 1	.. 25	.. ..
	No. 2	.. 22	.. ..
QUICKSILVER		.. 80	.. ..

LONDON METAL MARKET.

LONDON, May 18, 1866.

		£.	s.	d.	£.	s.	d.
COPPER	Best selected, per ton	89	0	0	@	..	..
	Tough Cake & Tile, per ton	86	0	0		..	..
	Burra Burra " "	90	0	0		..	..
	Copper wire, per lb	0	0	11¼		..	..
	" tubes, "	0	0	12¾		..	..
	Sheathing & Bolts, per ton	91	0	0		..	..
	Bottoms, " "	96	0	0		..	..
	Old (Exchange)	77	0	0		..	..
IRON	Bars Welsh in London	7	10	0	8	0	0
	Do. to arrive	7	10	0	7	12	6
	Nail rods	8	7	6	9	5	0
	Do. Stafford in London	8	15	0	8	17	6
	Bars " "	8	15	0	10	0	0
	Hoops " "	9	15	0	10	10	0
	Sheets, single	10	7	6	11	0	0
	Pig No. 1 in Wales	4	5	0	4	10	0
	Refined Metal, do	4	10	0	5	0	0
	Bars Common do	6	15	0	7	5	0
	Do. Merch. Tyne or Tees	7	10	0	..	..	..
	Do. Railway in Wales	6	10	0	6	15	0
	Do. Swede in London	11	10	0	..	..	..
	To arrive	11	10	0	..	..	..
	Pig No. 1 in Clyde	2	15	0	3	0	0
	Do. f. o. b. Tyne or Tees	2	9	6	..	..	..
	Do. Nos. 3, 4, f. o. b. Do	2	6	6	2	5	6
	Railway Chairs	5	10	0	5	15	0
	Do. Spikes	11	0	0	12	0	0
LEAD	English Pig Common	21	0	0	..	..	..
	Do. ordinary soft	21	5	0	21	7	6
	Do. (W. B.)	22	10	0	22	15	0
	Do. Sheet	21	15	0	..	..	..
	Do. Red Lead	23	10	0	24	0	0
	Do. White	27	0	0	30	0	0
	Do. Patent Shot	23	15	0	24	0	0
	Spanish	20	5	0	20	10	0
STEEL	Swedish in kegs, rolled, p ton	13	0	0	14	0	0
	Do. hammered	15	0	0	16	0	0
	Do. in faggots	16	0	0	16	10	0
	English Spring	19	0	0	25	0	0
QUICKSILVER	Per bottle	7	0	0	..	..	..
SPELTER	Foreign, per ton	21	0	0	..	..	..
	To arrive " "	21	0	0	..	..	..
ZINC	In Sheets	28	0	0	..	..	..
TIN	English Blocks	85	0	0	..	..	..
	Do. bars in barrels	86	0	0	..	..	..
	Do. refined	88	0	0	..	..	..
	Banca	78	0	0	..	..	..
	Straits	75	0	0	..	..	..
TIN PLATES	IC Charcoal, 1st qu., per box	1	13	0	..	..	..
	IX Do., 1st quality "	1	15	0	..	..	..
	IC Do., 2d quality "	1	11	0	..	..	..
	IX Do., 2d quality "	1	17	0	..	..	..
	IC Coke	1	6	6	1	7	0
	IX Do	1	12	6	1	13	0
	Canada Plates, per ton	13	10	0	..	..	..
	In London; 20s. less at the works.						
YELLOW METAL	Sheathing, p lb	0	0	8½	..	..	..
	Sheets, per lb	0	0	8½	..	..	..
INDIAN CHARCOAL	Pigs, in London	7	0	0	7	10	0

* At the works, 1s.@1s. 6d. less.

SALES OF ORES.

LEAD.

	TONS.	£.	s.	d.	PURCHASERS.
MAY 7—Islay Mining Co	67	14	11	0	Walker, Parker & Co
" 11—Great Laxey "	100	22	17	0	Sheldon, Bush & Co
" 14—Frongoch "	60	12	15	0	Newton, Keats & Co
" " "	60	12	16	0	"
" " East Barren "	37½	16	5	0	"
" " "	37½	16	5	0	Sheldon, Bush & Co
" " Cuna Erdlr "	20	17	7	6	"
" " "	45	17	4	0	"
" 17—Frank Mills "	40	18	5	0	Burg, Fost & Co
" " "	65	12	16	6	Mitchell & Co

(CONTINUED ON PAGE 172.)

NEW YORK STOCK MARKET.

MINING.	June 2. BID.	ASKED.	June 4. BID.	ASKED.	June 5. BID.	ASKED.	June 6. BID.	ASKED.	June 7. BID.	ASKED.	June 8. BID.	ASKED.
Ada Elmore	3 10	3 20	3 05	3 20	3 10	.....	3 25	3 30	3 00	.....	3 20	3 25
Altona	.....	2 25	.....	.....	.....	2 25	.....	.....	.....	.....	.....	2 25
American Flag	.....	2 75	.....	2 00	2 00	.....	3 00	.....	3 00	.....	3 00	2 00
Atlantic & Pacific	4 85	4 90	4 90	5 00	4 60	4 90	4 80	5 00	4 50	4 75	4 00	4 50
Bates & Baxter Gold	1 85	2 00	1 75	2 25	1 80	.....	1 80	2 25	1 80	1 95	.....	2 00
Benton Gold	1 25	1 30	1 25	1 30	1 26	1 35	1 27	1 30	1 27	1 30	1 25	1 30
Bobtail Gold	.....	.....	.....	3 25	.....	3 00	.....	3 00	.....	4 00	.....	3 00
Bullion Consol. Min'g Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Consolidated Gregory	11 05	11 05	10 80	11 10	10 40	10 60	10 70	10 85	10 50	10 80	10 80	10 95
Coryton	1 25	1 50	1 45	1 50	1 25	1 50	1 25	2 00	.....	.....	.....	1 50
Downieville Gold	40	43	41	43	41	43	41	42	42	42	41	45
Eagle Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Hill	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gunnell Gold	87	90	85	88	84	87	82	85	76	78	71	73
Gunnell Central	.....	4 80	.....	5 00	.....	5 00	.....	5 00	.....	5 00	.....	5 00
Holman	35	37	36	37	36	38	35	36	34	37	32	38
Hope Gold	2 75	.....	3 00	4 00	3 00	4 50	3 00	.....	3 25	4 00	3 00	4 00
Kipp & Buell Gold	1 50	1 60	1 50	1 65	1 50	1 60	1 50	1 60	1 50	1 50	1 40	1 50
Liberty Gold	.....	.....	.....	26	10	30	.....	.....	.....	26	.....	.....
Liebig Gold	.....	75	.....	1 00	.....	1 00	.....	1 00	.....	.....	25	1 00
Manhattan Gold	.....	.....	.....	2 50	.....	2 50	.....	3 00	.....	.....	.....	.....
Montana	.....	1 50	.....	1 25	.....	1 25	.....	1 25	.....	80	.....	65
New York	25	30	27	30	27	30	26	30	20	30	25	30
Quartz Hill	3 80	4 00	3 85	4 00	3 90	4 10	4 25	4 50	4 00	4 20	3 60	4 10
Rocky Mountain Gold	3 25	3 45	2 00	3 00	.....	3 00	.....	3 30	2 50	2 75	2 50	3 00
Silver Eagle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smith & Parmelee Gold	8 75	8 85	9 05	9 15	9 15	9 25	9 10	9 20	9 00	9 15	9 00	9 25
Texas Gold	.....	.....	.....	.....	25	.....	.....	1 00	.....	.....	.....	.....
Virginia City	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waddingham Gold	.....	.....	12 00	15 00	.....	18 00	.....	18 00	.....	18 00	.....	12 00
Caledonia Copper	.....	5 00	.....	5 00	.....	4 50	.....	4 50	.....	4 50	.....	4 50
Canada Copper	70	75	.....	1 00	1 00	1 00	.....	.....	80	1 00	.....	1 00
Central Copper	.....	.....	.....	.....	.....	.....	.....	100	00	.....	.....	.....
Copper Falls	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sheldon & Cohnsbam Cop	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Knowlton Copper	.....	.....	3 50	.....	.....	.....	3 50	5 00	3 75	5 00	.....	.....
Mendota Copper	.....	5 00	.....	1 50	.....	.....	.....	4 00	.....	.....	.....	.....
Minnesota Copper	.....	14 00	.....	14 00	.....	.....	.....	14 00	.....	.....	.....	14
Norwich Copper	.....	.....	.....	1 25	.....	.....	.....	1 50	.....	.....	.....	1 50
Ogima Copper	.....	.....	.....	.....	.....	.....	.....	6 00	.....	.....	.....	.....
Superior Wisconsin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Doubo Lead	.....	25	.....	.....	.....	.....	.....	50	.....	.....	.....	.....
Phœnix Lead & Mining Co	.....	2 50	.....	2 50	.....	2 00	.....	1 75	.....	.....	.....	1 40
Wallkill Lead	.....	1 00	75	1 00	.....	1 00	80	90	.....	1 00	.....	1 00
Columbian Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schuylkill Coal	.....	7 00	.....	.....	.....	.....	.....	.....	.....	7 00	.....	7 00
Lake Superior	.....	.....	.....	.....	.....	.....	.....	8 00	.....	.....	.....	.....
Copake Iron	.....	.....	.....	.....	.....	.....	.....	1 00	.....	1 00	.....	95
Foster Iron	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Annular Drill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eagle Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland	.....	.....	4 70	.....	.....	.....	.....	.....	.....	.....	5 00	.....
Clute Lead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Isle Royal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British American Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior	1 00	.....	1 90	.....	2 05	2 25	2 05	2 25	2 05	2 50	.....	.....
Black Hawk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
La Crosse Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perigo Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Princeton Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

OIL STOCKS.

Benneboff Run	12 15	12 20	12 20	12 30	12 25	12 35	12 25	12 30	12 30	12 20	12 25	12 10	12 10	12 20
Buchanan Farm	30	37	35	37	35	37	32	40	30	39	32	39	32	35
Central	2 50	2 55	2 45	2 60	2 45	2 50	2 51	2 60	2 35	2 60	2 40	2 60	2 40	2 60
Excelsior	35	40	35	40	38	40	35	40	36	40	38	40	38	40
First National	8	10	8	10	8	10	8	9	7	9	6	8	6	8
Ivanhoe	.....	.....	2 20	.....	2 20	.....	2 25	2 75	2 20	.....	2 20	.....	.....	.....
N. Y. & Alleghany	3 90	.....	3 85	3 90	3 75	4 00	4 25	5 00	4 85	5 00	4 70	4 80	.....	.....
Northern Light	.....	2 50	.....	2 25	.....	.....	.....	2 50	.....	2 50	.....	.....	.....	.....
Oil Creek of N. Y	60	65	60	65	55	62	50	64	.....	75	.....	60	.....	.....
Pit Hole Creek	2 50	2 70	2 60	2 70	2 50	2 65	2 60	2 75	2 40	2 60	2 25	2 50	.....	.....
Rynd Farms	21	.....	21	.....	20	25	21	30	20	25	20	30	.....	.....
Shade River	50	60	46	54	50	60	50	75	47	52	45	49	.....	.....
United States	5 00	5 10	5 10	5 25	4 95	5 05	4 75	5 00	5 05	5 15	5 40	5 60	.....	.....
Palmer Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire and Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Venango & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allen Wright	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bergen Oil & Coal	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Benneboff & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Equitable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fee Simple	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forest Co. Petroleum Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germania	10	11	9	12	9	12	10	15	10	14	11	13	.....	.....
Gt Western Consolidated	25	50	25	50	.....	.....	.....	.....	.....	20	50	20	50	.....
Guild Farm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heydrick	16	35	12	.....	12	.....	13	35	18	40	16	35	.....	.....
Heydrick Bros	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
High Gate	11	12	10	11	10	15	10	15	5	20	10	15	.....	.....
Homowack	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lilly Run	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oak Shade Petroleum	.....	.....	.....	2 70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. Oil Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
President	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherman & Barnsdale	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherman Oil	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

FREE LIST.

Benneboff Run Oil	4 05	4 25	4 15	4 25	4 30	4 50	4 30	4 50	4 60	.....	5 10	5 20	.....	.....
Brevoort	1 30	2 00	1 30	2 00	1 25	1 90	1 60	2 00	1 00	2 00	.....	.....	.....	.....
Bliven	50	.....	50	1 00	50	1 00	50	.....	50	.....	50	.....	.....	.....
Brooklyn	50	85	.....	75	50	90	.....	90	.....	55	50	90	.....	.....
Bradley	7	10	4	10	5	10	5	.....	.....	8	7	8	.....	.....
Cherry Run Petroleum Co	15	25	.....	.....	16	20	.....	25	.....	25	.....	.....	.....	.....
Clinton Oil	80	.....	75	1 00	80	95	90	1 10	1 20	1 50	90	.....	.....	.....
Consolidated (New York)	.....	1 30	.....	.....	.....	1 20	.....	1 20	.....	1 15	.....	1 10	.....	.....
Empire City Pet'm Co	.....	30	.....	35	.....	40	.....	.....	15	30	10	25	.....	.....
Eclectic Oil	.....	.....	.....	.....	1 50	1 80	.....	.....	.....	.....	.....	.....	.....	.....
Enniskillen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hamilton McClintock	.....	2 00	1 25	2 00	.....	2 00	.....	.....	.....	2 50	.....	.....	.....	.....
Liberty	.....	.....	5	10	.....	.....	.....	.....	.....	.....	.....	20	.....	.....
Mt. Vernon	.....	25	.....	.....	.....	.....	.....	.....	5	25	5	25	.....	.....
Manhattan	10	.....	10	25	10	15	.....	.....	10	.....	15	20	.....	.....
National	.....	2 50	.....	.....	.....	.....	60	2 50	60	.....	1 00	.....	.....	.....
New York & Newark	10	20	10	16	10	13	50	16	8	10	.....	10	.....	.....
New York, Phil. & Balt	12	20	14	20	12	20	15	20	14	15	12	25	.....	.....
Second National	.....	.....	25	50	35	50	.....	.....	25	1 00	.....	.....	.....	.....
Oceanic	7	10	8	11	8	.....	.....	.....	5	20	10	.....	.....	.....
Pepper Well	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pit Hole No. 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pit Hole Farms	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pet. Consolidation	17	20	16	18	16	18	16	20	16	.....	15	.....	.....	.....
Tack Petroleum Co., N.Y.	.....	10	5	15	5	9	.....	.....	5	10	.....	.....	.....	.....
Union	.....	.....	.....	.....	2 50	.....	2 50	.....	.....	.....	2 25	.....	.....	.....
United Petroleum Farms	24	26	23	28	20	25	22	30	22	24	24	25	.....	.....
West Va. Oil & Coal Co	5	8	5	6	5	8	5	6	2	.....	5	6	.....	.....
Webster	20	24	20	22	16	21	15	20	15	20	17	20	.....	.....

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

COAL.

Companies.	June 1. BID.	ASKED.	June 2. BID.	ASKED.	June 4. BID.	ASKED.	June 5. BID.	ASKED.	June 6. BID.	ASKED.	June 7. BID.	ASKED.
Belmont	3 12	4 25	3 12	4 25	3 12	4 25	3 12	4 25	3 12	4 25	3 12	4 25
Eagle Hill Mutual	1 50	1 60	1 50	1 60	1 50	1 60	1 50	1 60	1 50	1 60	1 50	1 59
Bear Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Continental	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	11 00	12 00	10 00	11 00	10 00	11 00	9 00	10 00	9 00	10 00	8 75	9 25
Gilberton	36 25	40 25	36 25	40 25	36 25	40 25	36 25	40 25	36 25	40 25	36 25	40 25
Glenwilo	.....	5 00	.....	5 00	.....	5 00	.....	5 00	.....	5 00	.....	5 00
Harleigh	49 50	55 00	49 50	55 00	49 50	55 00	49 50	55 00	49 50	55 00	49 50	55 00
Lackawana	.....	7 50	.....	7 50	.....	7 50	.....	7 50	.....	7 50	.....	7 50
Lorberry	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Locust Dale	17 50	20 00	17 50	20 00	17 50	20 00	17 50	20 00	17 50	20 00	17 50	20 00
Mammoth Vein	.....	12 00	.....	12 00	.....	12 00	.....	12 00	.....	12 00	.....	12 50
Mount Pleasant	28 00	32 00	28 00	32 00	28 00	32 00	28 00	32 00	28 00	32 00	30 00	35 00
New England	26 45	34 75	26 45	34 75	26 45	34 75	26 45	34 75	29 00	32 00	29 00	32 00
Shoo & Mountain	29 00	30 00	25 00	25 00	28 00	25 00	28 00	25 00	28 00	26 00	28 00	28 00
Summit Branch	13 00	14 00	12 00	14 00	12 00	14 00	13 00	13 50	13 00	13 50	13 00	14 00

MINING.

Albany and Boston	..	14	.....	.....	..	14	..	14	11½	..	..	13	.....	.....
Bay State	13½	14¾	.....	.....	14½	15	14¾	15	14½	14¾	13¾	14	.....	.....
Boston	1¼	.....	.....	.....	1¼	1½	..	1½	1¼	1½	1¼	1½	.....	.....
Central	..	40	.....	.....	..	..	..	..	..	40	..	40	.....	.....
Concord	4¼	4½	.....	.....	4	4¼	..	4½	..	4	3¾	4	.....	.....
Copper Falls	42½	..	.....	.....	43¼	44	43	44	43	..	42	43	.....	.....
Franklin	43	44	.....	.....	43½	44	43	44	43	..	43	43	.....	.....
Hancock	..	20½	.....	.....	..	20½	19	20½	20½	20½	20	20½	.....	.....
Humboldt	..	6½	.....	.....	..	7	5	6	..	5⅞	..	5¾	.....	.....
Huron	40½	..	.....	.....	..	..	44¼	46	44½	45	42	44	.....	.....
Isle Royal	..	13	.....	.....	11½	13	12½	13	12½	13	..	12	.....	.....
Menard	2	3	.....	.....	1¾	2½	1¾	2¼	1¾	2½	1¾	2¼	.....	.....
Minesota	asst. pd.	.....	.....	.....	11½	12	11¾	12½	11½	12	11½	..	.....	.....
National	18½	19	.....	.....	..	19	..	..	..	..	15	..	.....	.....
Petherick	6½	7	.....	.....	6¾	6¼	6¾	..	6½	..	6	.....	.....	.....
Pewabic	36	36½	.....	.....	36	36¾	36	36½	36½	37	36½	..	.....	.....
Phœnix	10½	12	.....	.....	..	11	10½	11½	10½	11	10	10½	.....	.....
Pittsburg	46	50	.....	.....	..	50	46	50	..	..	45	50	.....	.....
Pontiac	1½	1¾	.....	.....	1¼	1½	1	2	1½	1¾	1	2	.....	.....
Quincy	46¼	50	.....	.....	46¼	47	46	48	48	48½	48	48½	.....	.....
Rockland	4¾	5	.....	.....	4¾	5	4½	5	4¾	5	4¾	5	.....	.....
South Side	2½	2¾	.....	.....	2	..	2	2¾	2½	3	1¾	3	.....	.....
Star	asst. pd.	2½	.....	.....	..	..	..	2½	1¾	2½	..	2¾	.....	.....
Superior	3¾	4	.....	.....	3½	3½	3¾	3¾	3½	3½	3½	4	.....	.....
Tolt	2¼	.....	.....	.....	1½	2	1⅛	..	1	1½	1¼	..	.....	.....
Winthrop	2	2¼	.....	.....	2¼	2½	2	..	2½	2	2½	2	2¼	.....
Consolidated Gregory Gold	11 80	12 00	11 05	11 10	10 75	10 90	10 40	10 50	10 70	10 80	10 50	10 75	.....	.....
Quartz Hill Gold	3 90	4 00	3 80	3 85	3 85	3 90	3 90	4 00	3 90	4 00	4 00	4 10	.....	.....
Smith & Parmelee Gold	8 90	9 00	8 75	8 80	9 05	9 10	9 15	9 25	9 10	9 15	9 00	9 10	.....	.....

PETROLEUM

Bovine Farm	4 00	6 00	4 00	6 00	4 00	6 00	4 00	6 00	5 00	10 00	5 00	10 00	.....	.....
Boston and Kentucky	15	25	15	25	15	25	15	25	10	20	10	20	.....	.....
Boston Oil Creek Land Co	.....	30	.....	30	.....	30	.....	30	.....	25	.....	25	.....	.....
Boston Petroleum Oil Co	75	2 00	75	2 00	75	2 00	75	2 00	60	2 00	60	2 00	.....	.....
Botolph Oil Well Co	.....	80	.....	80	.....	80	.....	80	.....	75	.....	75	.....	.....
Crescent Petroleum Co	70	1 00	70	1 00	70	1 00	70	1 00	75	1 00	75	1 00	.....	.....
Everett Oil Co	6	10	6	10	6	10	3	6	2	5	2	5	.....	.....
" " (Pref. Stock)	35	60	35	60	35	60	35	60	40	50	40	50	.....	.....
Farrar	.....	5 00	.....	5 00	.....	5 00	3 50	7 00	4 50	7 00	4 50	7 00	.....	.....
Fuller Farm	15	20	15	20	15	20	15	20	15	20	15	25	.....	.....
Great Basin	.....	6	.....	6	.....	6	.....	6	.....	6	2	5	.....	.....
Indian Spring	10	18	10	18	18	25	18	25	15	25	15	22	.....	.....
Mass. and Oil Creek	16	22	14	20	14	20	20	25	16	25	15	25	.....	.....
New England	8	12	8	12	8	12	7	10	6	8	6	8	.....	.....
New York and Boston	56	1 00	56	1 00	56	1 00	56	1 00	56	1 00	56	1 00	.....	.....
Pepper Petroleum	4 00	.....	4 00	.....	4 00	.....	4 00	4 50	4 00	4 50	4 00	4 50	.....	.....
Pitt-burgh and Boston	2	5	2	5	2	5	2	5	2	5	2	5	.....	.....
Tremont	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 00	.....	.....
Suffolk and Oil Creek	10	20	10	20	10	20	10	20	10	20	10	25	.....	.....
Winthrop	3	8	3	8	3	8	3	8	3	8	2	5	.....	.....
Independ. of U. S. & C.W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

New York Companies.

Benneboff Run	12 20	12 25	12 15	12 25	12 10	12 25	12 25	12 35	12 30	12 20	12 30	.....	.....	.....
Bergen Oil and Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bradley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buchanan Farm	30	37	35	40	30	37	35	37	35	37	32	40	.....	.....
Central	2 45	2 50	2 50	2 60	2 45	2 50	2 45	2 50	2 45	2 50	2 35	2 40	.....	.....
Cherry Run	15	25	16	25	15	25	15	25	16	20	.....	25	.....	.....
Consolidated	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire City	.....	30	20	30	.....	30	.....	32	.....	40	15	40	.....	.....
Empire and Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior	35	40	35	40	35	40	38	42	35	40	35	40	.....	.....
Northern Light	.....	2 40	.....	3 00	.....	2 40	.....	2 25	.....	2 25	.....	2 00	.....	.....
Oceanic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oil Creek	60	65	61	65	60	65	60	65	55	60	55	60	.....	.....
Palmer Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
President	.....	25	.....	25	.....	25	.....	25	.....	25	.....	25	.....	.....
Pit Hole Creek	2 64	2 70	2 70	2 40	2 64	2 70	2 55	2 65	2 65	2 75	2 40	2 50	.....	.....
Rynd Farm	21	.....	21	50	21	.....	21	.....	20	25	21	30	.....	.....
Union	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
United States	5 05	5 10	5 00	5 05	5 05	5 10	4 75	5 00	4 75	5 00	4 90	5 00	.....	.....
Webster	24	24	20	25	24	24	20	22	16	21	15	20	.....	.....
Shade River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@	40 00
Cupelling "	35 00@	40 00
Scales	10 00@	30 00
Assay Balances and Weights	100 00@	200 00
Plumbago Crucibles	25@	1 50
Paris "	15@	1 25
Porcelain Evaporating Dishes	25@	5 00
Fire Tongs	75@	3 50
Hammers	1 00@	2 50
Funnels	15@	1 00
Litmus Paper, quire	1 00@	1 25
Ingot Moulds	1 25@	3 00
Flasks, Bohemian Glass	15@	1 00
Sand Baths, Iron	25@	1 00
Pivers	50@	2 00
Mortar and Pestle, Iron Agath. etc	50@	20 00
Lamps, Gas and Alcohol	75@	5 00
Blowpipes	50@	3 00
Hydro-Oxygen Blowpipes	25 00@	125 00
Pincers, or Cutting Pivers	75@	1 50

FEDERAL SECURITIES.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	WHEN PAY.	INTEREST.	WHEN PAYABLE.		OFF. PER CENT.	ASKED PER CENT
Registered Bonds	28 January, 1847	$9,415,250	6	1867	$564,915	Jan.	July.	122½	125
Coupon "									
Registered Bonds	31 March, 1848	8,908,312	6	1868	534,500	Jan.	July.	.....	122¾
Coupon "								125	.....
Registered Bonds	22 June, 1860	7,022,000	5	1871	351,100	Jan.	July		
Coupon "									
Registered Bonds	14 June, 1858	20,000,000	5	1874	1,000,000	Jan.	July.	105¾	106
Coupon "									
Bonds, March 3, 1863		.....	6	1881	.....				
Oregon War Debt		.....	6	1881	.....	Jan.	July.		
Registered Bonds	8 Feb. & 17 July & Aug., 1861	283,715,650	6	1881	.....	Jan.	July.	.....	103¾
Coupon "								.....	
Registered "	25 February, 1862 (5-20's)	514,780,500	6	1882	30,886,830	May	Nov.	.....	102⅝
Coupon "									
Registered "	(5-20's) new issue	100,030,000	6	1884	6,000,000	May	Nov.	102⅛	102¼
Coupon "									
Bonds, March 3, 1865	(5-20s)	65,175,500		1885	.....				
Registered "	(10-40's)	171,219,100	5	1904	.....	Mar.	Sept.	.....	96¼
Coupon "								95⅞	
Total April 1		1,180,236,342							

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	AUTHORIZING ACTS.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.		OFF.	ASKED.
Bonds Cent'l P. R. R. Co., July 2, 1864		6	$2,332,000 00	1895	$1,398,000 00	Jan.	July		
Bonds, Union P. R. R. Co., July 2, 1864		6	1,972,000 00	1895	.....	.....	.....	.....	.....
Temporary Loan		4	.....	10 days' notice	.....	.....	.....	.....	.....
Temporary Loan		5	.....	10 days' notice	.....	.....	.....	.....	.....
Temporary Loan		5	18,576,363 00	10 days' notice	.....	.....	.....	.....	.....
Certificates of Indebtedness, March 1, 1862		5	62,258,000 00	1 yr from date	.....	.....	1 yr. fr. date	.....	.....
1 and 2 Years' Notes, March 3, 1863		5	8,535,900 00	.....	.....	.....	1 yr. fr. date	.....	.....
3 Years' Compound Interest Notes	(March 3, 1863 / June 30, 1864)	6	172,012,111 00	3 yrs from date	.....	.....	At maturity		
3 Years' Treasury Notes	(June 30, 1864 / March 3, 1865)	7.3	.....	3 yrs from date	21,900,000 00	Aug.	Feb.	102⅞	102½
3 Years' Treasury Notes, March 3, 1865		7.3	817,014,000 00	3 yrs from date	21,900,000 00	June	Dec	102⅞	102½
3 Years' Treasury Notes, March 3, 1865		7.3	.....	3 yrs from date	16,790,000 00	July	Jan	102¼	102⅜
Aggregate of Debt Bearing Lawful Money Interest. April 1			1,064,455,041 00	Total Interest					

SALES OF ORES—(Continued from page 170.)

BLOCK TIN.

	T.	C.	Q.	LBS.	£. s. d.	£. s. d.
MAY 10—Wheal Trevenna	5	15	3	4	95 5 0	261 19 3
" 14—Great Wheal Vor	70	16	1	1		3644 6 1

COPPER.

SOLD AT TRURO, MAY 17.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
Dev. Gt. Con.	2,112	£7 8 8 2 6	E. W. Russell	128	461 0 6
K'gs'n D'v'n	693	1 391 5 6	Bell United	118	557 9 0
Marke Val...	423	1,412 1 6	Wheal Emma	113	636 8 6
N.W. Martha.	326	494 18 0	Lady Bertha.	55	94 17 6
East Caradon	303	1,250 2 6	Prince of W.	46	440 5 0
Otel Tor ..	301	965 10 6	N.E. Russell.	33	173 5 0
Wit. Friend.	190	1,073 7 0	Gollacombe..	9	20 18 6
Dev. & Corn	182	462 17 0	Open Precip.	3	63 0 0

Average Standard, £115 2 0; Average Produce, 5½; Average Price per ton, £3 12 6; Quantity of Ore, 4,945 tons; Quantity of Fine Copper, 274 tons, 1 cwt; Amount of Money, £17,945 10 6.

Previous Average Standard, £112 7 0; Average Produce, 5½; Standard of corresponding sale last month, £119 0 0; Produce, 5⅜.

BY WHOM PURCHASED:

NAMES.	TONS.	AMOUNT.
Vivian & Sons	727	£2,724 5 9
Freeman & Co	158½	917 10 0
Grenfell & Sons	220	1,508 4 6
Sims, Willyams & Co	531½	1,638 17 0
Williams, Foster & Co	838	5,485 5 6
Mason & Elkington	518½	2,056 4 9
Bankart & Sons	462½	1,467 17 3
Copper Miners' Company	331	1,143 0 6
Charles Lambert	522	1,368 12 6
Newton, Keates & Co	128	620 16 6
Sweetland, Tuttle & Co	44½	188 0 3
Hudland & Co	280	542 10 6
Crown Copper Co	134	483 17 0
Total	4,945	£17,945 10 6

SAN FRANCISCO STOCK MARKET.

LATEST BY MAIL.

NAME.	FRIDAY, May 8.		Sales for week Ending May 8.	
	Open'g	Clos'g	Shares.	Amount.
Sierra Nevada	$ 4½	$ ½	498	$ 1,946 00
Imperial	139¾	140	361	34,935 00
Gould & Curry	800	800	3	2,400 00
Chollar—Potosi	315	315	226	50,781 00
Yellow Jacket	687½	710	390	139,362 00
Bullion	80	80	192	18,750 00
Crown Point	1250	1250	3	3,700 00
Belcher	325	325	26	9,427 00
Overman	80	75	985	76,367 00
Ophir	520	515	397	238,066 00
Hale & Norcross	.....	.....	17	15,732 00
Exchequer	.....	.....	80	700 00
Savage	986	975	3	7,955 00
Empire Mill	180	180	4	654 00
Alpha	.....	.....	.....	.....
Blue Ledge	.....	.....	.....	.....
Lady Bryan	.....	.....	50	125 00
Daney	.....	.....	15	143 00
Caledonia Tunnel	.....	.....	.....	.....
Segrgat'd Belcher	.....	.....	.....	.....
Real del Monte	.....	.....	.....	.....
Confidence	16	15	174	3,940 00

LATEST BY TELEGRAPH.

SAN FRANCISCO, June 2.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	725	Crown Point	975
Savage	850	Yellow Jacket	525
Chollar-Potasi	225	Belcher	150
Ophir	...	Alpha	500
Hale and Norcross	950	Imperial per share	100

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

55,070.—ROCK-DRILL.—Julius C. Dickey, New York City:

I claim the combination of the drill bits, A, B and C, substantially as set forth.

55,086.—SOCKET-JOINT FOR OIL-TOOLS.—Robert Graecy, Pittsburg, Pa.:

I claim the use of the swivel-head, d, key, g, and key-seats, e and h, when used in combination with the male and female parts of the joint and the sleeve or band, c, the whole being constructed, arranged, and operating substantially as herein described and for the purpose set forth.

55,178.—APPARATUS FOR COLLECTING FLOATING OIL FROM STREAMS.—Hamilton E. Towle, New York City:

I claim, 1st, The combination with the squeezing roller of an apparatus constructed as herein described, of a swinging apron or scraper actuated by means of a spring or equivalent mechanism, and arranged and operating as and for the purposes herein set forth.

2d, In combination with the squeezing roller and swinging scraper, as described, I claim the employment of a second scraper arranged and operating as herein shown and set forth.

3d, In combination with the squeezing roller, I claim the lever arms in which it has its bearings, and the rods or bolts by means of which the pressure of the roller may be regulated; the whole being constructed and arranged substantially as herein shown and described.

55,181.—QUARTZ MILL.—C. Ph. Wagner, New York City:

I claim, 1st, Communicating an alternate reciprocating movement bodily to the lower end of the crushing-jaws, I, J, and at the same time a vibrating movement to the upper ends of said jaws, so as to produce a rubbing or guiding action, and a crushing action combined and employed for this purpose, by means substantially as described.

2d, Pivoting the lower ends of the vibrating jaws, I, J, or their equivalents, to bearings which have a vertical vibration, and communicating a lateral vibration to the upper ends of said jaws, by means substantially as shown and described.

55,055.—METHOD OF BLASTING.—Niram Cadwallader, Birchville, Cal.:

I claim the use of compressed air in combination with all explosive substances, for the purpose of increasing the explosive force of said substances by the aid of a greater amount of oxygen, and assisting by the force of pressure as well as by the expansion of the air from the heat generated by the explosion, said compressed air to be confined in the chamber with the explosive material, or, when in a chamber or recess contiguous to it, to be let free at the time the explosion takes place, substantially as described and for the purpose set forth.

55,114.—AMALGAMATOR.—Washington Kendrick, New York City. Antedated May 14, 1866:

I claim, 1st, The use for amalgamating and separating ores of a tubular heater, E, provided with suitable pipes for injecting and discharging wet or superheated steam or hot air in combination with the tank, A, constructed and operating substantially as and for the purpose set forth.

2d, The agitator, F, in combination with the tubular drum, E, and the tank, A, constructed and operating substantially as and for the purpose described.

55,201.—CUPOLA FURNACE.—Philip Mckenzie, Jersey City, N. J., and Charles W. Isbell, New York City, assignors to the Smith & Sayre Manufacturing Company, New York City:

We claim, 1st, The two or more separate chambers, i, i, arranged one above another around the lower portion of the furnace, and each communicating with a separate tuyere or series of tuyeres for conducting the air into the same furnace at different levels, substantially as herein set forth and for the purpose specified.

2d, In combination with back air-chambers, we claim the valves, u, u, forming separate communications with the blast-pipe for the purpose of admitting the air, and controlling or stopping the admission thereof to the several chambers, substantially as herein described.

55,216.—PRESERVING TIMBER.—Frederick Ransome, Ipswich, England:

I claim treating timber, for the purpose of preserving the same, with a solution of silicate of soda or potash, and afterwards with a solution of chloride of calcium, or other soluble salt of an alkaline earth or chloride of aluminum or iron, substantially as described.

RE-ISSUE.

2,261.—CAR FOR TRANSPORTING PETROLEUM.—James and Amos Densmore, Meadville, Pa. Patented April 10, 1866, reissued:

I claim, 1st, The two tanks, B, B, or their equivalent, when constructed and operating in combination with an ordinary railway car, substantially as and for the purposes set forth.

2d, The two tanks, B, B, or their equivalents, when set directly (or nearly so) over the car trucks, and when constructed and operating in combination with an ordinary railway car, substantially as and for the purposes set forth.

3d, The frames, C, C, C, C, the bolts, 1, 2, 3 and 4, and the cleats, H, H, H, H, when constructed and operating in combination with tanks, B, B, and an ordinary railway car, substantially as and for the purposes set forth.

4th, The steps, F, F, the man-holes and man-heads, D, D, the faucets, E, E, and the run-way, G, when constructed and arranged in combination with tanks, B, B, and an ordinary railway car, substantially as herein set forth and described.

Mineral and other On-dits.

☞ The best alloy for making taps for beer-barrels is, for the body of the tap: tin, 785 parts; antimony, 195; nickel, 20. For the key the best proportions: tin, 807; antimony, 175; nickel, 20; or, tin, 750; antimony, 215; and nickel, 70. These alloys are quite inoxydable under ordinary circumstances, and are the result of careful study.

☞ The deposits of iron ore from which England draws her chief supply of iron, are supposed to be fresh water formations, deposited at first as hydrated peroxide of iron—just as the bog ore now forming in Swedish lakes—and afterward reduced to the carbonate by the presence of decomposing organic matter.

☞ The production of California has largely decreased since the rich discoveries in the adjacent Territories, but it is still very large, and has assumed a more regular and systematic shape, so that receipts from that source may now be calculated with considerable accuracy.

☞ A letter from Nevada says: We have, in different sections of the State, salt in quantities large enough to supply the world. It is especially valuable to us for the purpose of reducing the silver ores, as without it the cost of reduction would be very much increased.

☞ In proportion to the other branches of manufacturing in this State, there is a great excess in the working of iron—and strange as it appears with the many beds of valuable iron ore lying in the immediate vicinity of this city, all the iron used in this business is imported.

☞ A tooth, weighing nearly three pounds, with roots and all complete, was recently discovered on the bed-rock, eighteen feet below the surface, on No. 10, above Discovery, in Last Chance district.

☞ Professor Agassiz, in a recent letter, reports the discovery of 1,400 new species of fish and animals, a number far greater than he had any reason to expect.

☞ A block of silver ore, weighing 104 pounds, taken from the Comstock lead, and valued at $624, was lately sent from Virginia City to England.

☞ For silvering copper and brass surfaces, M. Boudier recommends a powder composed of 12 parts cyanide of potassium, 6 parts nitrate of silver, and 24 parts prepared chalk.

☞ Kerosene oil kept in the same room with butter will spoil it.

☞ Two lead mining companies are operating near Eastport.

Special Scientific Brevities.

☞ Into a bell-glass full of air a central tube is made to carry a slow current of hydrogen. At the end of the tube, which is carried nearly to the dome of the bell-glass, electric sparks are made to pass. The hydrogen is immediately ignited, taking the form of small luminous spheres, which rush about in all directions. After a few seconds there are an infinite number of these little luminous globes, which seem to play at hide-and-seek without ever coming into contact.

☞ Sir. J. G. Taylor recently read a paper before the Royal Geographical Society of England, on his discoveries. Among other things, he mentioned that he had deciphered two inscriptions, found near the source of the Tigris, recording royal conquests of which mention had been found in the records of Nineveh. He considers the fact a strong confirmation of the accuracy attained in interpreting the hieroglyphics.

☞ M. Saussure's theory that cretinism did not exist in places 1,000 metres (or 3,280 English feet) above the level of the sea, was disproved by the Sardinian Commission, who found numerous cases in localities elevated 1,600 metres (or 5,248 feet) above the sea. In one village of this elevation ninety cases of goitre and cretinism were found in every 1,000 of the population.

☞ Of the practical tendency of modern science a striking illustration is seen in Prof. Leibig's resignation of his important office in Munich. He goes to London to take charge of its immense system of drainage, and make it tributary to agricultural wealth. He proposes to gather the contents of sewers and cess-pools into vast receptacles, and disinfect them by chemical agencies for the use of farmers in the vicinity of the city.

☞ Water, in passing from the solid to the liquid state, converts 140 degrees of sensible into latent heat; in passing from the liquid to aeriform condition, it absorbs 1,000 degrees of heat, rendering it latent. Alcohol, in evaporating, absorbs 374 degrees of heat; ether, 163 degrees; and spirit of turpentine, 138 degrees.

☞ It is estimated by Mr. H. E. Moring, of New York, the best recognized authority on the subject, that the whole non-producing world consumes about 300,000 tons of coffee per annum.

☞ The Mariposa *Free Press*, of April 14th, says that some Mexicans in the vicinity of Jimsal, last week, found a nugget of gold worth $4,440.

All Sorts.

☞ Some authors attribute the discovery of gold to Tiocus of Tiarace; others to Mercury, son of Jupiter; others to Pisus, King of Italy, who, having left his country, went to Egypt, where he was chosen King after the death of Mizraim, and received the surname of Gol of Gold, on account of his discovery. Others say that Eachis or Cœcus, son of Jupiter, or Sol, son of Oceanus, was the first who discovered gold. Eschyles thinks that Prometheus not only discovered gold but also other metals.

☞ A new method of restoring sweetness to linseed oil which has become rancid, has been patented in France. It consists merely in forcing air, heated to between 220 and 260 degress Fahrenheit, through the oil by means of perforated tubes, or a perforated false bottom.

☞ It is estimated that the total supply of gold for the latter half of the present century will not be less that $5,000,000,000—an amount too vast for comprehension, and more than seven times the production of two centuries ago.

☞ It is proposed to dam up the Kansas River at Lawrence. It is ascertained that the flow of water is 70,000 barrels per minute, affording with a six foot dam about 5,000 horse power, and capable of running 300 runs of stone.

☞ A wag being asked what stone should have been placed at the gate of Eden after the Expulsion, answered: Adamantine (Adam ain't in).

☞ Admiral Wilkes, of the Trent seizure, has bought a large landed property in the heart of North Carolina, including extensive iron works.

☞ The Dayton, Nevada, *Sentinel* of recent date states that over one hundred Chinamen have left that vicinity for Montana within five days.

☞ "Mining at You Bet, Red Dog, and Gouge-eye," is the opening sentence in a local item of the Dutch Flat, California, *Enquirer*.

☞ What notes compose the most favorite tunes?—a d how many tunes do they compose? Bank-notes—they make fortunes.

☞ A superior metallic pen is now manufactured of an alloy containing the new metal, aluminum, and copper.

☞ The colors of the chameleon are a matter over which the animal has voluntary control.

☞ Birmingham is about to erect a statue to Watt. It is to be of Sicilian marble.

☞ The lumber trade of Minnesota, this season, will amount to about $1,000,000.

☞ Why is a baker like a beggar? Because he kneads bread.

Coal Oil.

The manufacturers of coal oil in North Wales, England, are organizing an association for the protection of their interests. It was stated at the meeting held for that purpose, that no less than 500 retorts had been erected near Hope Station, each consuming about 500 tons cannel (coal).

A well at Midland, Michigan, that has for six years yielded fresh water, has gradually changed to salt water, ten quarts of which, when boiled down, makes a teacup full of good salt.

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the Territorial Enterprise, May 12, 1866.

AMERICAN JOURNAL OF MINING.—We have received the second number of this journal, published in New York city by Western & Co., No. 37 Park Row, and edited by George F. Dawson, whilom of the *Enterprise* and the press of California. The JOURNAL OF MINING is the handsomest print of its class in the United States, and is edited with ability and tact. It is published weekly at $4 a year.

From the Montana Radiator of May 5th, 1866.

We have received the first number of the AMERICAN JOURNAL OF MINING, published in New York city, and devoted, as its name indicates, to the interests of the miner. It is an illustrated sixteen page newspaper, published weekly, ably conducted, and will prove a welcome and valuable visitor to the miner, and, in fact, every one who desires to inform himself on the subject of mining in its various departments throughout the world. The number before us contains articles on "New Rock Drilling Machines," "Coal Supply," a summary of prospects, methods of labor, and mining news of the mineral regions of the United States, "The Great Overland Route," "Glance at the Mining Situation," "Petroleum," and a number of other valuable and interesting articles. Every news dealer and miner should have it.

From the Reese River Reveille, Austin, Nevada, May 31.

NEW PAPER.—We have received the first number of the AMERICAN JOURNAL OF MINING, a weekly paper published in New York. It gives evidence of editorial ability, and furnishes much interesting and useful matter.

From the Mining and Scientific Press, San Francisco, Cal., May 5th, 1866.

THE "AMERICAN JOURNAL OF MINING."—This is the title of a new weekly journal of sixteen pages, published in New York, the first two copies of which we have just received. Its salutatory address is brief and modest, making no special promises, except that politics, being entirely "incompatible with the spirit and scope of such a paper," will be utterly ignored. The typographical execution of the paper is remarkably neat, and its mining summary very complete. The subject of petroleum very properly receives a large share of its attention; and oil companies, as well as gold and silver mining companies, are tabulated in a very convenient form.

From the American Artisan, May 23.

We have received the first seven numbers of the first volume of the AMERICAN JOURNAL OF MINING, a weekly periodical edited by G. F. Dawson, published by Western & Co., 37 Park Row, New York, and filled with very interesting matter—original and selected—relative to mining, oil-boring, and the allied arts. Subscription $4 a year in advance.

From the Journal of Applied Chemistry, May 1866.

AMERICAN JOURNAL OF MINING.—Published by Western & Co. Edited by Geo. F. Dawson. 37 Park Row, N. Y. Weekly—$4 per annum. We have received the first five numbers of this publication. Such a paper, edited as ably as the specimens we have, is needed by those interested in mining. Its leading articles are excellent. We wish it the success it deserves.

From the New Yorker Handels-Zeitung.

[TRANSLATED.]

The first number of the *American Journal of Mining*, edited by Mr. George F. Dawson, is before us and we welcome it. We think the *Journal* has made its appearance just in the right time.

IRON ORES FOR SALE.

The Rossin Iron Works

Are now prepared to make sales of

SELECTED IRON ORES,

from their well-known

Caledonia Mines, in St. Lawrence County, New York.

These Ores yield from Fifty to Fifty-five per cent., in the large way, and the quality of the Iron made from them is well established.

The Ores can be delivered at KEENE STATION, on the line of the ROME, WATERTOWN & OGDENSBURG RAILROAD COMPANY, or at OGDENSBURG, as purchasers may prefer, and the Company's Agents at Ogdensburg will secure freight Westward for the Ore without any charge of commission.

Further particulars may be obtained by addressing the Company's Secretary, R. GORDON, Box 48, New York.

OIL LANDS FOR SALE.

Thirteen Thousand Acres of Land,

in the Canada Oil Regions, in the Townships of Enniskillen, Bawn, Zone, Moore, Brooke and Sombra, for sale or to lease, for Oil purposes, in portions to suit purchasers.

For terms and particulars apply to the proprietor.

T. D. LEDYARD, 74 Yonge street, Toronto.

TO THE MINING PUBLIC.—THE SUBscribers are now prepared to receive either Gold or Silver Ores, by the Ton or smaller quantity, and make a fair working test of same, and respectfully invite all who are interested in Minerals to call and examine their process for extracting the Precious Metals. They are also prepared to make the usual Fire Assay.

Our Works are at the foot of North Third Street, Brooklyn, E. D. They can be reached either by Grand Street Ferry, or by Greenpoint cars, which pass the door. BARBER & WYCKOFF.

DESULPHURIZING PROCESS.

Patented by B Keith, A. B ur and N. S Keith,

SEPTEMBER 9TH, 1862.

Parties desirous of procuring the right to use the process, and

INFORMATION OF THE LATEST AND MOST IMPROVED MACHINERY FOR REDUCING ORE,

Can apply to B. KEITH 41 Liberty Street, New York

Or to A. BEHR & N. S. KEITH, Black Hawk, Colorado.

SCHOOL OF MINES, COLUMBIA COLLEGE

EAST 49th STREET, NEW YORK.

FACULTY:

F. A. P. BARNARD, S.T.D., LL.D., President.
T. EGLESTON, Jr., E. M., Mineralogy and Metallurgy.
FRANCIS L. VINTON, E. M., Mining Engineering.
C. F. CHANDLER, Ph. D., Analytical and Applied Chemistry and Geology.
JOHN TORREY, M.D., LL.D., Botany.
CHARLES A. JOY, Ph. D., General Chemistry.
WILLIAM G. PECK, LL.D., Mining Surveying.
JOHN H. VAN AMRINGE, A.M., Mathematics.
OGDEN N. ROOD, A.M., Mechanics and Physics.

The plan of this School embraces a three years' course for the degree of ENGINEER OF MINES, or BACHELOR OF PHILOSOPHY.

For admission, candidates for a degree must pass an examination in Arithmetic, Algebra, Geometry and Plain Trigonometry. Persons not candidates for degrees are admitted without examination, and may pursue any or all of the subjects taught. The next session begins October 1, 1866. The examination for admission will be held on June 25, 26, and September 28, 29. For further information, and for catalogues, apply to

DR. C. F. CHANDLER, Dean of the Faculty.

WOOLWORTH & BARTON,

Overland Forwarders to all Points in Colorado, Utah, Montana and New Mexico Territories.

GENERAL OFFICES, ST. JOSEPH, Mo., and NEBRASKA CITY, NEBRASKA.

DANIELS & BROWN, Agents, Denver City. F. E. SHORT, Travelling Agent.

H. B. MURRAY, General Eastern Agent, 291 Broadway, cor. Reade St., New York.

INCRUSTATION OF

STEAM BOILERS.

This greatest of evils in the use of steam is entirely prevented by the "Anti-Incrustable Powder" of

H. Winans, 11 Wall Street, New York.

INVENTED AND INTRODUCED IN 1855.

now ten years in successful operation in over 6,000 boilers, without injury, and saving many times its cost in fuel and repairs.

A clean boiler generates steam more freely, and will outlast ten dirty or incrusted ones.

CARD.—Professor H. DUSSANCE, Chemist, lately from the laboratory of the French Government, will leave for Europe in the middle of May, where he will reside several months. He takes occasion to inform his numerous friends that he is ready to transact any business there in the chemical line, such as buying books and apparatus, machinery, presses, etc., selling chemical patents, etc. For further information address New Lebanon, N. Y.

GOMEZ SUBMARINE

ELECTRIC FUSE,

For Oil Wells, Mines, Blasting, Military and Naval War purpose

124 BLEECKER STREET, NEW YORK

D. COGHLAN,

MINING AND CIVIL ENGINEER,

57 Broadway, New York.

REPORTS ON MINES, AND MAKES PLANS OF THE UNDERGROUND WORKINGS.

SURVEYING OF ALL KINDS DONE,

AS WELL AS

MECHANICAL or other ENGINEERING DRAWINGS.

Best references given as to long experience in the MANAGEMENT OF MINING AND AMALGAMATING WORKS, and of competency as a Civil Engineer.

TAYLOR & SCOTT,

Mining Engineers and Surveyors,

48 PINE STREET, NEW YORK,

Will examine and report upon Copper, Lead, Coal, and other Mines; furnish Plans, and, if not at too great a distance from the city, will undertake the management of the same. Surveying of every description attended to.

REFERENCES: Prof. A. A. Hayes, Boston; Gen. A. E. Burnside, Providence, R. I.; S. L. French, Esq., Boston; N. B. S. Lead Co., New York; Black River Mining Co., Boston; H. Williams, Esq., M. E., Canada; Lionel Brough, Esq., Gov. Ins. Mines, London, Eng.; New Hampshire Silver Lead Co., New York; St. Flavien Mining Co.; R. C. Hawkins, Esq., New York and Boston, and others.

JULIUS G. POHLE, M. D.,

FORMERLY OF, AND SUCCESSOR TO,

Dr. JAMES R. CHILTON & CO,

Analytical and Consulting Chemist,

No. 489 BROADWAY, - - - - NEW YORK

(N. W. COR. OF BROOME STREET.)

Analyses and Assays made of Ores of Gold, Silver, Quicksilver, Lead, Copper, Manganese, Nickel, etc., etc.; Minerals, Alloys, Petroleum, Commercial Articles, etc.

CHARLES P. WILLIAMS,

ANALYTICAL AND CONSULTING CHEMIST,

AND

MINING GEOLOGIST,

No. 138 WALNUT STREET, PHILADELPHIA.

Assays and Analyses of Ores, Soils, etc.,

Executed with Promptness and Accuracy.

EXAMINATION OF, AND REPORTS ON, MINERAL LANDS AND MINES FURNISHED ON APPLICATION.

D. VAN NOSTRAND,

PUBLISHER AND IMPORTER OF

Civil, Mining & Marine Engineering Works,

No. 192 Broadway,

Offers for sale a large selection of

American and Foreign Standard and Late Books.

☞ SEND FOR CIRCULARS. ☜

PATENT AGENCY.

J. VAN SANTVOORD,

(FORMERLY EXAMINER IN UNITED STATES PATENT OFFICE, AND LATELY WITH MUNN & CO.)

Solicitor for Patents, American and Foreign,

41 PARK ROW ("TIMES" BUILDING), NEW YORK.

JAY COOKE & CO.,

BANKERS,

In connection with our houses in Philadelphia and Washington, we this day open an office at No. 1 Nassau street, corner of Wall, in this City.

Mr. EDWARD DODGE, late of CLARK, DODGE & CO., New York; Mr. H. C. FAHNESTOCK of our Washington house, and Mr. PITT COOKE, of Sandusky, Ohio, will be resident partners.

We shall give particular attention to the purchase and sale of GOVERNMENT SECURITIES, and to orders for purchase and sale of STOCKS, BONDS and GOLD.

JAY COOKE & Co.

New York, March 1, 1866.

IMPORTANT TO MINING COMPANIES INtending to erect Machinery in California, Nevada, Idaho, Montano, Arizona, Mexico, or any part of Pacific coast.

The fact being indisputable that many of the failures in mining operations are caused by not having machinery adapted to working the ore, it is of the first importance to start right on this point.

MR. CYRUS PALMER, one of the proprietors of the Miner's Foundry, San Francisco, has lately arrived, and will remain in New York and vicinity for some months, and is prepared to take contracts to furnish all kinds of mining machinery of the most approved style at short notice, delivered in San Francisco, or at any of the mines on the Pacific coast. He will also, if required, contract to build mills at the mines, and put them in complete running order.

Mr. Palmer has just left the Pacific coast, and is therefore, acquainted with the most approved machinery in use for reducing ore and saving the precious metals. Mr. P. has not only been actively engaged for the last ten years in manufacturing mining machinery, but has had large experience in working mines and reducing ores. On application to his address, 25 Nassau street, by letter or otherwise, he will be pleased to give any information required in regard to mining or other machinery, gratis, to any company, whether they wish to contract or not.

Mr. Palmer refers to the following companies for whom the Miners' Foundry have built mills the past year:

Knickerbocker and Nevada, 70 Cedar street; Lincoln Company, 80 Broadway; Cosmos Company, 158 Broadway; Connecticut and Nevada Company, 47 Liberty street; Cobden Company, 17 Broad street; New York Company, 80 Broadway; Tarshish Company, 80 Broadway; Washington, 80 Broadway; Mettacom Company, 144 Chambers street; Consolidated Company, 157 Broadway.

Mr. Palmer can be found at the office of R. H. Vance, Esq., 25 Nassau street, corner Cedar, from 11 to 12 o'clock, daily.

PROSPECTUS.

THE NECESSITY FOR A THOROUGHLY RELIABLE medium of information upon MINING MATTERS has been seriously felt by those interested in the mines and mills of the United States. THE AMERICAN JOURNAL OF MINING supplies that want.

It is under the editorial control of GEORGE FRANCIS DAWSON, whose reputation is too well established to require, on our part, any comment.

There is amply sufficient capital invested in the JOURNAL OF MINING to insure its complete success.

THE JOURNAL OF MINING contains—or will contain in future issues:

Seventeen wide, solid columns of condensed, summarized Mining (including Petroleum) intelligence from all parts of the American Continent.

Four to Five Columns of Editorial articles upon topics of interest to the mining community.

Two to Four Columns of original and selected papers on Mineralogy, Geology, Metallurgy, Assaying, Mining and other Scientific Subjects.

Five to Ten Columns of judiciously selected miscellaneous articles relative to mining, the kindred sciences, etc.

Carefully Compiled Directories of Petroleum, Gold, Silver, Copper and other American Mining Companies.

Latest Quotations of Mining and Petroleum Stocks in the New York, Philadelphia, Boston and San Francisco Markets.

Nevada Mining Stocks reported by Trans-continental Telegraph.

Latest Reports of the London and New York Metal Markets; with lists of Copper sales at Swansea and Redruth, England.

A valuable Table, showing the current market values of the various classes of Federal Securities.

A convenient list of the New York current prices of chemicals and implements used in Assaying.

A reliable list of Standard Works on Mineralogy, Geology, Metallurgy, Assaying, Mining, etc.

THE JOURNAL OF MINING also publishes reports of scientific experts relative to noteworthy mines and works; and beautifully illustrated Descriptions of new processes and recent inventions in Mine and Mill machinery. It is printed in the best possible manner, upon a very superior quality of paper, and forms a compendium of trustworthy information that must prove invaluable to mine-owners, practical miners, Mineralogists, Geologists Metallurgists and others.

Each number of the JOURNAL OF MINING comprises sixteen pages of interesting and valuable reading matter; two volumes per annum, each containing four hundred and sixteen pages, forming an excellent and almost indispensable work of reference for all interested in Mining, Milling, etc.

☞ Published every Saturday, at 12 o'clock, M.

TERMS

SUBSCRIPTION.		ADVERTISING.	
Per annum, one copy - -	$4 00	One Line [Nonp] 1 inser'n.	0 50
Six months, one copy -	2 25	One Square, 10 lines, 1 do.	2 00
Three months, one copy -	1 25	One Square, do 4 do.	5 00
Single copy - - - -	0 10	One Square, do. one year.	40 00

Canadian Subscribers 25 cents extra for postage.

☞ Specimen Copies sent free.

Address WESTERN & COMPANY.

No. 37 Park Row, and 145 Nassau St., New York City.

TEXAS
Gold Mining Company,
OF COLORADO.

CAPITAL STOCK, - - - $500,000
50,000 Shares of $10 Each.

Directors:

GEN. WILLIAM T. THOMPSON.....New York
WILLIAM W. LAMAN..... "
WILLIAM E. PARISH..... "
JOSEPH W. HOLMAN.....Colorado Territory
JOHN O'NEIL.....Philadelphia

President: GEN. WILLIAM T. THOMPSON. **Vice-President:** JOSEPH W. HOLMAN

Secretary and Treasurer: . . WILLIAM E. PARISH.

Office, 155 Broadway, New York, Room No. 9.

The property of the Texas Gold Mining Company is located in the city of Black Hawk and its immediate vicinity, Gilpin County, Colorado, and on the well-known Bob-Tail, Fisk, and other Lodes.

325 feet on the.....Bob-Tail.
200 feet on the.....Fisk.
200 feet on the.....Chambers.
400 feet on the.....Pennsylvania.
200 feet on the.....Galena.
200 feet on the.....Hoosier.

It is useless to repeat to the public the value of the (Bob-Tail and Fisk) Lodes, as every one with the slightest knowledge of Colorado knows their great value, and the large amount of Gold they have already produced. It is well known that, with the LYON process of treating Ores, we are safe in saying the Ores from the Bob-Tail and Fisk will yield not less than $100 per ton.

This Company is organized for the purpose of IMMEDIATELY DEVELOPING and working the Lodes, and it is proposed to PUSH the work with the UTMOST ENERGY.

The Directors have every confidence that their efforts will produce, with the facilities already at their command, SATISFACTORY AND SPEEDY RESULTS.

COLORADO HAS ALREADY PRODUCED OVER 73,000,000 OF DOLLARS IN GOLD.

Her prospects were never so brilliant as now. LYON'S process of Smelting Ores has succeeded beyond his most sanguine expectations, and the cry that we cannot save the Gold is forever silenced.

Below we give the amount of Gold taken out of the Bob-Tail Lode up to January 1st, A. D. 1865:

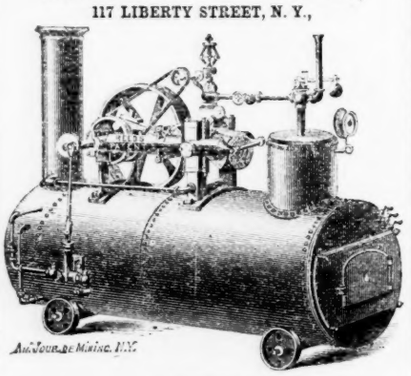
Genoid, Burghardt, Ingalls and Culbertson.....$250,000
Hurlburt, Holman & Dinton..... 450,000
Crandall, Hall, Patterson, Cook & Wilson..... 450,000
Black Hawk Co., or Lee, Jud & Lee..... 500,000
Smith, Chaffee & Fields..... 425,000
Sensindeffer & Buckmiller..... 300,000

ERICSSON'S
CALORIC ENGINES,
FOR
PUMPING & HOISTING IN MINES.
PORTABLE ENGINES,
HOISTING GEAR, PUMPS, Etc.

☞ Jobbing Done.

JAMES A. ROBINSON,
164 DUANE STREET, (CORNER HUDSON,)
New York.

REED & COGSWELL,
CONSULTING ENGINEERS,
117 LIBERTY STREET, N. Y.,



MANUFACTURERS OF
Slide and Oscillating, Stationary and Portable
ENGINES,
OF ALL SIZES.—ALSO FURNISH ALL KINDS OF
Machinery Tools and General Supply.

☞ Drawings of all kinds of Machinery executed to order.

JOHN A. REED. W. P. COGSWELL.

Great Improvements
IN
SEWING MACHINES.
EMPIRE SHUTTLE MACHINE!
SALESROOMS:
No. 536 Broadway, N.Y., and No 250 Washington street, Boston.

This Machine is constructed entirely on new principles of mechanism, possessing many rare and valuable improvements, having been examined by the most profound experts, and pronounced to be SIMPLICITY and PERFECTION COMBINED.

It has a straight-needle perpendicular action, makes the LOCK or SHUTTLE STITCH, which will neither RIP nor RAVEL, and is alike on both sides; performs perfect sewing on every description of material, from Leather to the finest Nansook Muslin, with cotton, linen or silk thread, from the coarsest to the finest number.

Having neither CAM nor COG WHEEL, and the least possible friction, it runs as smooth as glass, and is emphatically

A NOISELESS MACHINE!

AGENTS WANTED for all Towns in the United States where Agents are not already established, to whom a liberal discount will be given.

Empire Sewing Machine Company.
H. W. ALDEN, President.
GEO. W. STAKE, Secretary and Treasurer.

THE HORACE WATERS GRAND, SQUARE and UPRIGHT PIANOS, MELODEONS and CABINET ORGANS, wholesale and retail. To let, and rent allowed if purchased. Monthly payments received for the same. Second-hand pianos at bargains, from $60 to $225. Factory and Warerooms, 481 BROADWAY. Cash paid for second-hand pianos. Pianos tuned and repaired. Sheet Music, a little soiled, at 1½ cents per page.
HORACE WATERS.

To Inventors and Others.

The proprietors of the AMERICAN JOURNAL OF MINING have connected with their establishment, Artists of experience and skill in

DESIGNING,
WOOD-ENGRAVING, and
LITHOGRAPHY.

Machinery, Buildings, Landscapes, etc., Designed and Engraved or Lithographed from a photograph or a plain comprehensive sketch, or from the object itself. Specimens of work ready for inspection. Terms moderate.

Inventors desirous of applying for Patents on their own account can have drawings for the Patent Office carefully and accurately executed,

AT VERY MODERATE RATES.

CONSOLIDATED LINE.

Great Through Route
TO
THE MINING REGION
AND
THE PACIFIC STATES.

The Holladay Overland Mail
AND
EXPRESS COMPANY.

having consolidated the property of the "OVERLAND STAGE LINE" and the "OVERLAND DISPATCH COMPANY"—comprising all the Overland stage lines running west from the Missouri river—and largely increased and improved their stock and coaches, and reduced their rate of fares nearly 25 per cent, will run a

Daily Line of Coaches

to all the principal points in the gold mines of Colorado, Utah, Montana, Idaho, Nevada, California and Oregon.

They are now running daily coaches from TOPEKA, (in connection with the railroad from St. Louis,) via the "Smoky Hill" route; and from ATCHISON, Kansas, (in connection with the Hannibal and St. Joseph Railroad,) and from NEBRASKA CITY and OMAHA, via DENVER CITY, Colorado, to SALT LAKE CITY, in Utah; thence connecting with their line of coaches for Virginia City and Helena, in Montana; Boise City in Idaho; Walla-Walla, Dalles City and Portland, Oregon.

At Denver City, Colorado, connecting with their double daily line of coaches for Central City, Blackhawk and Empire City.

Passengers for New-Mexico and Arizona also connect at Denver, with a tri-weekly line of coaches for Fort Union, Taos, Santa Fe and other points in those territories.

Passengers for Nevada and California connect at Salt Lake City with daily coaches for Austin, Reese River, Virginia City, Nevada, Humboldt and San Francisco, California.

This Company will also, at an early day, run a line of stages from Salt Lake City through the silver mining district of the Parahumgitt Valley to Colville, at the head of navigation on the Colorado River.

RATES OF FARE:

Between Topeka, Atchison, Nebraska City, Omaha, and Denver.....$125
Between same points and Salt Lake City 250
Between Denver and Salt Lake City..... 150
Between Salt Lake City and Boise..... 125
Between Salt Lake City and Virginia City..... 125
Through tickets from the Missouri River to Boise and Virginia City..... 350

TIME:

To Denver City 5 days,
To Salt Lake 9½ days,
To Boise 12½ days,
To Virginia City 13 days,
To San Francisco 16 days.

A treasure and freight express, carried on mail time, in charge of trustworthy and competent messengers, to all of the above named points.

For further information,

Apply at the office of the Company,
No. 55 William street, corner of Exchange place, New York.

BEN. HOLLADAY, President.
W. S. GURNEE, Vice President.
WM. H. LOGG, }
EUGENE KELLY, } Directors.
S. L. M. BARLOW, }
JOHN E. RUSSELL, Treasurer.
GEO. K. GTIS, Secretary.

E. REMINGTON & SONS,

MANUFACTURERS OF
REVOLVERS, RIFLES,
MUSKETS AND CARBINES,
FOR THE UNITED STATES SERVICE. ALSO
POCKET AND BELT REVOLVERS,
REPEATING PISTOLS,
RIFLE CANES, REVOLVING RIFLES,

Rifle and Shot Gun Barrels, and Gun Materials, sold by Gun Dealers and the Trade generally.

☞ In these days of House-breaking and Robbery, every house, Store, bank and office should have one of

REMINGTON'S REVOLVERS.

Parties desiring to avail themselves of the late improvements in Pistols, and superior workmanship and form, will find all combined in the new Remington Revolvers.

Circulars containing cuts and description of our Arms will be furnished upon application.

E. REMINGTON & SONS, Ilion, N. Y.
MOORE & NICHOLS, Agents.
40 Cortland streets, New York.

KAVANAGH & DECKER'S
BILLIARD TABLES

We are now prepared to furnish New and Second-hand Tables with our New Patent Cushions, at One Day's Notice.

Illustrated Catalogues and Price Lists sent by mail.

KAVANAGH & DECKER.
235 Canal street, New York.

THE UNITY

Gold Mining Company,

OF COLORADO.

Incorporated under the Laws of the State of New York.

CAPITAL STOCK, - - - $100,000.

100,000 Shares of $1 each,

Of which $50,000 are reserved for working Capital.

President.

GEORGE E. COCK, 68 Broadway, New York.

Vice-President.

GEORGE R. WEED, Rutland, Vermont.

Treasurer.

ROBERT G. HOYT, 1 Vesey street, New York.

Secretary.

MARQUIS B. SPAULDING, 2 Astor House, Broadway, New York.

Superintendent at Mines.

GEORGE A. SAYRE, Central City, Colorado.

Counsel.

AMBROSE MONELL, 54 Wall street, New York.

Trustees.

M. B. SPAULDING, of New York.
GEORGE E. COCK, of New York.
R. G. HOYT, of New York.
AMBROSE MONELL, of New York.
GEORGE R. WEED, of Vermont.
J. Q. A. BEAN, of Boston.
WM. TRAIN MUIR, of Colorado.

Office of the Company, No. 2 Astor House, Broadway, N. Y.

The mining property of the Company is situate in the Counties of Clear Creek and Gilpin, in Colorado, and comprises Nine Thousand and Fifty Feet of Quartz Lode claims, and Two Tunnel claims. In this property are Ten Discovery claims, embracing Eleven Hundred Feet of developed Mines—the discovery claim being that point upon the Lode where gold was first found—besides several other claims upon which shafts are sunk, of varying depth. The operations at the mines will, for the present, be confined to the taking out of ore, a demand for which now exists, and will continually increase as new processes of saving gold are improved and perfected. It is not designed to purchase or equipany mill, at least for the present. The whole means and energies of the Company will be applied to the development of their mines.

The Mines of the Company in Gilpin County are situate in the well-known mining districts of Gregory, Nevada, Eureka, Illinois Central, Russell, Central, Lake Gulch, Spring Gulch, etc., etc., sixteen hundred feet being upon

QUARTZ HILL.

In the Gilpin County property are included

400	feet on the	King Solomon Lode,	
400	"	Pacific	"
200	"	Excelsior	"
200	"	Augusta	"
600	"	Ontonagon	"
200	"	Cox	"
600	"	Black	"
100	"	Caledonia	"
100	"	Mackie	"
100	"	Lincoln	"
100	"	London	"
100	"	Pennsylvania	"
100	"	Bunhill	"
100	"	Grand River	"
100	"	Stark County	" etc.

The Mines of Gilpin County are too well known to require any extended notice. The above-described property, as will be readily observed, is situate in the best mining districts, and on the most favored localities in the County.

The Company's Mines in Clear Creek County

are situate in well-known districts—Trail Run, Union, Jackson, Ohio, Griffith, etc. In Trail Run the Company own upon the Coyote, Leavenworth and Louisa—on each 100 feet; Coyote Extension, 200; Cornwall, Colorado and Berkshire—on each 300 feet. In Union District, upon the Bobtail, Northrup, Astor, Cook County, etc. In the other districts they own 200 consecutive feet on a number of valuable Lodes. The Mines of Clear Creek County are rich, but not so well developed as those of Gilpin County. In this portion of the property are

Two Tunnel Claims in Union District.

Possessing, as they do, an immense and valuable property—enough for four or five companies—this Company intend to develop it with great vigor, and make every foot of it available. The owners of the property show their faith in this enterprise by receiving their full payment in the stock of the Company, which they agree not to sell until the whole amount of stock reserved for working capital is sold. All of the working capital will be applied to the development of the Company's mines; there are no salaries except that of Superintendent, and no office rent to be paid out of the Company's funds. Work will be commenced at once on the mines.

This enterprise recommends itself. Based upon a sound foundation, managed with skill, and all its operations directed by business ability, it must become a great success.

The stock reserved for working capital is now offered for sale at par, by order of the Board of Trustees. The purchaser of every share of the stock becomes part owner in all the valuable properties of the Company. No future assessments, and no individual liabilities.

Subscription books are open at the Office of the Company, where certificates of mill men who have crushed the ores, specimens and descriptive notices of the property, may be seen

THE "SHAW"

COPPER MINE.

Public attention has several times, of late, been directed to the great mineral resources of Canada East, and the riches of the copper fields have been given prominence to by Sir William Logan, in his "GEOLOGY OF CANADA;" and Mr. Herbert Williams, the Superintendent of the

HARVEY HILL MINE,

has done much, practically and by writing, to enable us to form a correct estimate of the immense value of that great mine. In the same *synclinal* there are the copper deposits of Sutton, Shefford, Stukely, Melbourne, Skipton, Chester, Halifax, Leeds, Inverness and St. Mary; and Lot on No. 9, in the 6th Range of the Township of Chester, is

THE SHAW MINE,

which at present may be viewed only as second to HARVEY HILL, from its being less developed. The Copper, which is in the form of purple and yellow sulphurets, is found in the "nacreous" slates; and "green carbonate," associated with quartz, has been discovered in several of the contests, giving to the copper-bearing schists a considerable wealth. Mr. Herbert Williams, who is highly esteemed by Sir William Logan, as a practical mining engineer, twice visited the property, in January and November, 1865, and reports the results of operations thus:

"No. 1 opening exhibits fair samples of purple and yellow sulphurets, associated with quartz veins.

"No. 2, distant SE. from No. 1 about 200 feet, exhibits wide bands of "nacreous" slates, carrying veins of quartz. This outcrop, for a width of 50 or 60 feet, carries some promising samples of purple and yellow Sulphurets, and, also, the green carbonate in notable quantity." Mr. Williams adds: "Adjoining this, to the SE., is the "VIGER" mining locations, upon which most promising discoveries of copper ore have been made, and are now being opened up; these dip towards, and will, I believe, be found to underlie, to a very considerable extent, the SHAW property."

In November, Mr. Williams reports: "The most important operation, since my previous visit, is the sinking of a shaft, to the depth of about 27 feet, in a band of copper-bearing schist situated to the westward of the openings referred to in my first report. This band has an average width of between 4 and 5 feet, and shows some fine and promising samples of purple and yellow sulphurets of copper, some tons of which have been broken and brought to the surface. The continuation of this band, notwithstanding its being capped over in several places, is discovered by the contests for a distance of between 500 and 600 feet, and, combined with the very promising appearance of the shaft, warrants my recommending a more vigorous trial of the property."

The contour of the lot presents many advantages for economic mining. The high ground SE. of the Craig coal will admit of mining by "adit" or "crosscut" to a very fair depth, thus dispensing with the use of expensive machinery for many years to come. There is abundance of wood on the property for all mining purposes, as well as for fuel; and one decided advantage which it possesses over the Harvey Hill Mine, is the abundant supply of water from a river passing through the property, which will enable the ore to be dressed at a very moderate cost.

The distance of this mine from the Athabaska station on the Grand Trunk Railway is 15 miles, by a moderately good road, and the transport of materials to and from the mines to that station will not exceed $4 per ton. Athabaska station is 64 miles from Quebec, and 26 from Richmond, on the Portland route. Laborers can be found as required, and at moderate wages.

In following the course of this synclinal in a South-westerly direction, the copper-bearing slates present themselves in several places, and there is no difficulty in tracing them, notwithstanding the absence of gossan, and there are other characteristics observable by which their existence is identified—one of which is the association of chloratide with the slates. The metamorphic action of the copper on the slate is characterized by some peculiar alterations whenever the copper is in contact with it. The discovery of the existence of further quantities of copper may therefore be reasonably expected.

The advantages thus offered by the "Shaw Mine" may be thus summed up:

1st. The existence of Copper ore of available richness in large quantity, and which can be easily worked for sometime by "adit."
2d. The Mine being easily accessible, and only a short distance from the Grand Trunk Railway.
3d. Cheap transport and cheap labor.
4th. Water and wood in sufficient abundance.

These all point out, that if any Copper Mine in Canada can be worked successfully, the "Shaw Mine" offers facilities, which must place it pre-eminently in that category, and encourage its owners to look forward to no distant day for returns, which must be highly remunerative.

Address communications "Proprietors Shaw Mine," care JOURNAL OF MINING, 37 Park Row, New York City.

BULLION CONSOLIDATED MINING COMPANY, Colorado. Mines in Summit and Clear Creek Counties. Shares, 300,000; Stock, $300,000.

J. P. WHITNEY, Secretary, 19 Lindall Street, Boston.

INCAS SILVER MINING COMPANY.—Mines in Summit and Gilpin Counties, Colorado. Shares, 500,000; Capital, $300,000.

J. P. WHITNEY, Secretary, 19 Lindall Street, Boston.

JOB PRINTING.

Plans, Specifications, Bill-Heads, Receipts

Letter-Heads, Show-Bills, Cards,

Circulars, etc. etc.,

Executed at the office of the AMERICAN JOURNAL OF MINING.

WESTERN & COMPANY,

37 Park Row, and 145 Nassau St., New York City.

P. O. Box 5,969

IMPORTANT TO MINERS.

Every description of Analysis and Assays carefully attended to, and returns promptly made, by

WESTERN & COMPANY.

No. 37 Park Row, and 145 Nassau St., New York City.
P. O., Box 5,969.

WANTED—A GENTLEMAN CONVERSANT with MINING MATTERS, to represent this Journal.

IMPORTANT AND VALUABLE WORKS

ON MINING, MINERALOGY, GEOLOGY AND METALLURGY.

ANSTED'S Gold Seeker's Manual. 1 vol. 12mo, cloth... $ 1 75

ANTISELL.—The Manufacture of Photogenic or Hydro-Carbon Oils, from Coal and other Bituminous substances, capable of supplying Burning Fluids. By Thomas Antisell, M. D. 1 vol 8vo..... 3 00

BUCKLAND (Rev. Wm.)—Geology and Mineralogy. 2 vols. 8vo, hf. cf 20 00
2 cloth. 8 vo, cloth..... 10 00

BLAKE (Wm. P.)—Report of a Geological Reconnoissance in California. 1 vol. 4to, illst. 10 00

COQUAND.—Traite des Roches. 1 vol. 8vo, hf. mor..... 5 25

DANA'S Manual of Mineralogy. 1 vol. 8vo. 2 25
Text Book of Geology. 1 vol. 12mo..... 2 00

DEGOUSSEE.—Guides des Sondeur et des Sondages. 2 vols. and Atlas, half mor 19 50

DUFRENOY.—Mineralogie. 5 vols. 8vo. 20

FOSTER AND WHITNEY.—Report of the Geology of the Lake Superior Land District. The Iron and Copper Regions. 2 vols. 8vo, and maps (scarce)..... 10

FAIRBAIRN.—Iron: its History, Properties, and Processes of Manufacture. By Wm. Fairbairn, C. E., LL. D. 1 vol. 8vo. New Edition 3 75

FEUTCHWANGER.—A Treatise on Gems. 1 vol. 8vo, cloth.... ..... 1 50

GREENWELL (G. C.)—A Practical Treatise on Mine Engineering. Handsomely illustrated. 1 vol. 4to, hf. mor. 27 50

GOODYEAR'S Translation. A Treatise on the Assaying of Copper, Lead, Silver, Gold and Mercury, from the German of Th. Bodeman and Bruno Kerl. 1 vol. 12mo, cloth. 2 50

HUMBLE.—Dictionary of Geology and Mineralogy. Third Edition. 1 vol. 8vo, cloth..... 3 50

HOSKOLD'S Practical Treatise on Mining Land and Railway Surveying, Engineering, &c. 1 vol. 8vo, cloth.. ... 15 00

JACOBS.—Precious Metals. 2 vols. 12mo. 12 00

KURR'S Mineral Kingdom. 1 vol. 4to, colored plates ... 15 75

KING (C. W.)—Natural History, Ancient and Modern, of Precious Stones and Gems. 1 vol. 8vo, cloth.. ..... 10 50

KUSTEL.—Nevada and California Processes of Silver and Gold Extraction, for general use, and especially for the Mining Public of California and Nevada; also, a description of the General Metallurgy of Silver Ores. By Guido Kustel, Mining Engineer. Illustrated by accurate engravings. 1 vol. 8vo, cloth..... 8 00

LAMBORN.—Rudimental Treatise on the Metallurgy of Copper. 1 vol. 12mo, limp cloth. Illustrated 1 00
—— Rudimentary Treatise on the Metallurgy of Silver and Lead. 1 vol. 12mo, limp cloth. Illustrated 1 00

LONG (Major S. H.) Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819 and 1820. Compiled by Edwin James, Botanist and Geologist for the Expedition. 4 vols. 12mo, hf. cf..... 50 00

McCORMICK.—Arizona; its Resources and Prospects. Pamphlet, 32 pp. with map. By R. C. McCormick (secretary of the Territory)..... 00 25

MITCHELL'S Manual of Practical Assaying. 1 vol. 8vo, cloth..... 10 50

MAKINS.—A Manual of Metallurgy, more particularly of the Precious Metals, including the Methods of Assaying them. By. G. H. Makins. 1 vol. 12mo, cloth. Illustrated by upwards of 50 engravings..... 3 50

MAP of the "Reese River" Mining District..... 3 00

MULLAN'S Miner's and Traveller's Guide to Oregon, Washington, Idaho, Montana, Wyoming, and Colorado, via the Missouri and Columbia Rivers. 1 vol. 12mo. ... 2 00

OVERMAN (Fred.)—A Treatise on Metallurgy; comprising Mining, and General and Particular Metallurgical Operations. 1 vol. 8vo, cloth..... 8 00
—— The Manufacture of Iron in all its Various Branches; including a description of Wood-cutting, Coal-digging, etc. 1 vol. 8vo, cloth. (scarce)..... 15 00

PIGGOT.—The Chemistry and Metallurgy of Copper. By A. Snowden Piggot, M. D. 1 vol. 12mo, cloth..... 1 50

PHILLIPS AND DARLINGTON.—Records of Mining and Metallurgy; or, Facts and Memoranda for the use of Mine Agents and Smelters. By J. A. Phillips and John Darlington. 1 vol. 12mo, cloth 2 50

PERCY (John).—Metallurgy; the Art of Extracting Metals from their Ores; and adapting them to various Purposes of Manufacture. Vol. 2, Iron and Steel. 1 vol. 8vo, cloth 21 00

SCOFFERN'S Useful Metals and their Alloys. 1 vol., cloth 3 75

SOPWITH (T.)—A Treatise on Isometrical Drawing as applicable to Geological and Mining Plans. 1 vol. 8vo, cloth (very scarce)..... 15 00

SWEET (S. H.)—Special Report on Coal; showing its Distributions, Classification and Cost, delivered over Different Routes to various Points in the State of New York, and the Principal Cities on the Atlantic Coast. By S. H. Sweet, late Deputy Engineer and Surveyor of the State of New York. Transmitted to the Legislature, March, 1865. 1 vol. 8vo, cloth 3 00

TAYLOR.—Statistics of Coal; including Mineral Bituminous Substances employed in the Arts and Manufactures. Second Edition. By R. C. Taylor. 1 vol. 8vo, cloth. .. 6 00

TRURAN (W.)—The Iron Manufacture of Great Britain, Theoretically and Practically considered; including Descriptive Details of the Ores, Fuels, and Fluxes employed, the Preliminary Operation of Calcination, the Blast, Refining, and Puddling Furnaces, Engines, Machinery, etc. Third edition, revised. Illustrated. 1 vol. 4to .. 20 00

WHITNEY.—A Geological Survey of California. Report of Field Work, from 1860 to 1864. By J. D. Whitney. 1 vol. quarto. 6 00

WHITNEY (J. D.)—Silver Mining Regions of Colorado. paper..... 00 25

Together with a Large Stock of Engineering and Mechanical Books.

For sale by WESTERN & COMPANY, Office JOURNAL OF MINING, 37 Park Row.

☞Catalogues of Scientific works sent post-paid on application

NEW YORK ROCK DRILL COMPANY.

OFFICE, 137 BROADWAY.

GEN. E. M. BARNUM, PRESIDENT, . . . G. A. GARDNER, SECRETARY.

This company are prepared to fill orders for Drilling Machines for all kinds of Rock work, for outside work, and for Mining.
The Machines now offered for sale are:

No. 1 Hand machine for one man, weighing 100 lbs., with 3 drills, complete.....$ 200 00
No. 2, " two " 125 " " " 250 00
No. 3. 1 horse power Machine, weighing 150 lbs., with 8 ft. steam hose, 3 drills, complete, 450 00
No. 4, 2 " " " 250 " " " " " 850 00
No. 5. Machine for VERTICAL drilling, *without engine*, to drill holes 4 to 6 inches diameter, with timber frame on wheels, &c.....$1,000 00
No. 6, Machine (entirely of iron), drilling at any angle holes 4 to 8 inches diameter, with *main* 4 horse power engine (on truck, and moved by own engine), $2,500 to 3,000 00

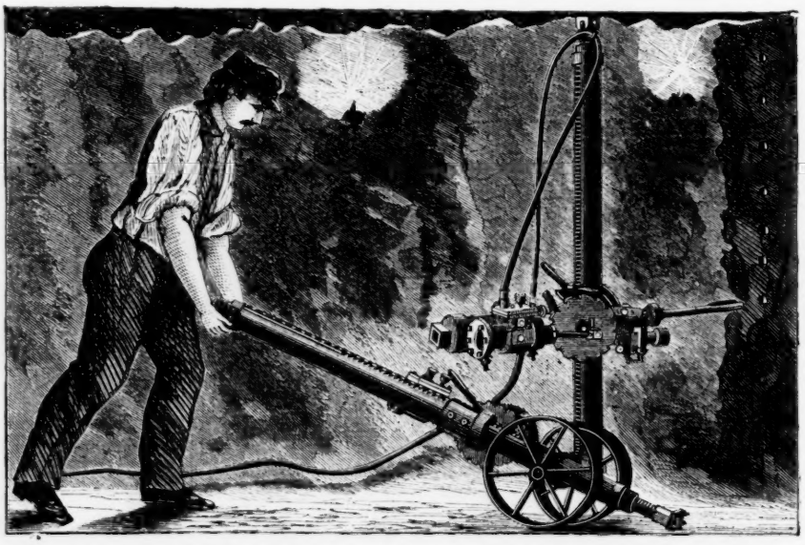
These are the only machines that have done regular work in this Country, and are the most Simple, Compact and Economical. We invite the closest scrutiny. A full sized Mining Drill can be seen daily drilling into a Block of Rockport (Mass.) Granite, the hardest Granite Known, at the Machine Shop of STERLING & KERR, No. 344 and 346 West 24th street, West of 10th avenue.

GARDNER'S PATENT ROCK DRILLING MACHINE FOR MINING PURPOSES.

DRIVEN BY STEAM OR COMPRESSED AIR. G. A. GARDNER, PATENTEE, NEW YORK.

Certificate.

NEW YORK, March 25, 1866.
MR. G. A. GARDNER, Sec'y N. Y. Rock Drill Co.:
SIR—After witnessing the operation of your Rock Drilling Engines for some [illegible] I am satisfied that they are capable of doing much better than by hand in any kind of rock, and will operate with about as much efficiency at any angle as a vertical, or horizontal piece; that they can work to confined spaces, such as stands and drifts of mines, railroad tunnels, etc., etc.; that several drills can be used where only one could be operated by hand labor. These Machines may be, I think, justly considered as fully twenty-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten linear feet every 24 hours.



Certificate.

No. 95 Liberty street,
NEW YORK, March 23, 1866.
MR. G. A. GARDNER, Secretary N. Y. Rock Drill Co.
DEAR SIR: Respecting the "Gardner Drill," I would say, we used it with perfect success on the Niagara Falls Canal. When we first worked it, we drilled in the solid limestone, holes on the diameter of six inches at the rate of eighteen inches deep in twenty minutes.
We used it for several months on the Niagara work, and found it more economical and effective than any other drill we have ever used. The rock is the hard blue limestone, with occasional boulders of quartz imbedded in it. You are at liberty to refer parties to me who may desire more particulars.
S. M. ALLEN
Late Vice Pres't of Niagara Falls Water Power Company

☞ THE CUT REPRESENTS A SECTION OF A MINING TUNNEL, OR *drift*, 6x11 FEET, WITH TWO DRILLING ENGINES; ONE DRIVEN BY *compressed air*, DRILLING HORIZONTAL HOLES. THE OTHER BEING MOVED IN THE FOREGROUND TO ITS POSITION ON A PAIR OF WHEELS *temporarily* ATTACHED TO ITS SUPPORTING COLUMN; THREE OF THESE COLUMNS, WITH TWO MACHINES ON EACH, MAY BE WORKED IN A DRIFT OF THIS SIZE, PRODUCING AS MUCH WORKING OF CUTS FULLY SEVENTY-FIVE MEN. ☜

These machines are very compact, measuring—independent of supporting column, etc.—30 inches in length by 12 inches breadth and depth, and weighing only 250 lbs. One man can move and adjust them to the work. The supporting column is held firmly in place by setting out the jack screw, thus bracing it between the top and bottom of tunnel, or the sides of shaft, and the machines are raised and lowered by a gear working in the rack on side of column, while the attachments to the column form a *universal joint* and allow the machines to work *at any angle*. They are automatic; one engineer can attend to a gang of four or six, working on the same face. Six of them can be worked in a heading four and a half by six feet, and in a shaft six by twelve feet, eight of them can be worked at once. In a railroad, or other large tunnel, an increased number of machines can be operated, being supported and moved upon a carriage running on rails. The blow is struck by the drill being projected by the reactive force of an india rubber spring, against the rock, the drill being as free from the working machinery at the instant of striking, as an arrow shot from a bow; 300 blows per minute can be given with the utmost force the steel drill point can bear. The cross-head to which the drill is attached is drawn back; (thus compressing the spring) by a cam rotated directly by the piston rod of an oscillating cylinder, the drill point has an automatic turning motion, and the entire machine is automatic, *self regulating*, according to the varying hardness of the rock; the machine working equally well with the same adjustment when drilling on flat, or on granite cutting two inches deep per minute, or on micaslate, sandstone, or other softer rocks, cutting four and six inches per minute. They drill equally well at any angle, and with them holes can be put in the most difficult places with great facility.

Machines for open cuts have been worked for several years on railroad and canal excavations, operated by four horse engines drilling four, six and eight inch diameter holes, and doing the work of fifty men. Rock-Drilling can be done with these machines for one-tenth the cost of hand labor, and in one-tenth the time. We are prepared to furnish machines with *sets of drills* for splitting granite, marble, etc.; *channelling machines* for marble, etc., when blasting is to be avoided; also machines for cutting the "BEARING IN" in Bituminous Coal Mines; we also manufacture the GARDNER PATENT DRILL POINTS, especially desirable for sinking oil wells; making round holes, requiring no reaming, and cutting faster than any other point.

PROSPECTUS

OF THE

Petroleum Fire-Proof Iron Tank Storage Company,

ORGANIZED BY SPECIAL ACT OF THE LEGISLATURE OF THE STATE OF NEW YORK.

APPROVED BY THE GOVERNOR, APRIL 11th, 1866.

ORGANIZATION.

President, L. S. WATKINS. Vice-President, J. C. CARY.
Treasurer, GEO. S. BATCHELLER. Secretary, S. E. MARVIN. General Superintendent, Hon. ADAM W. KLINE.
Executive Committee: President, L. S. WATKINS; Vice-President, J. C. CARY; Superintendent, ADAM W. KLINE.

The object of the above named corporation is to secure the construction of Iron Tanks, made from boiler iron, riveted, with covers, and to be air-tight.
These tanks will be located at Titusville and other points in the Oil Regions, near the railroads, where the pipes, conducting oil from wells, terminate. The Company will also store oil for parties and insure the same against fire or flood. The business will also embrace the purchase of oil on their own account at certain stages of the market and hold the same for an advance, relying upon the security of the tanks for its preservation, until the price will warrant its disposal. Persons have never engaged in this trade on account of the insecurity in storing oil in wooden tanks. The Downer Oil Company have several of these iron tanks at their Refinery in Corry, and by their use are enabled to take advantage of the market in the summer season and provide their supply for the winter.
The established reputation of Mr. L. S. WATKINS, the President of this Company, as one of the oldest and most successful operators in the oil trade, is a security to stockholders of the success of this organization.
The Capital Stock of the Company is five hundred thousand dollars ($500,000), divided into five thousand shares of one hundred dollars each.
Those desiring any of said stock, can address Gen. G. S. BATCHELLER, Treasurer, Room 5, No. 344 Broadway, New York City, and Jenkins Van Schaick, No. 35 Broad street, New York, or the same may be procured of any other officer of the Company.

REFERENCES.

The Company respectfully refer the public to the following gentlemen as to the general character of this enterprise, and the integrity and character of the officers:

His EXCELLENCY R. E. FENTON, Governor of New York.
His Honor THOS. G. ALVORD, Lieutenant-Governor of New York.
Hon. JOHN THOMPSON, (Late M. C.), Poughkeepsie, New York.
Hon. JAMES M. COOK, (Late State Comptroller and Bank Superintendent), Saratoga, New York.
Hon. CLARK B. COCHRANE (Late M. C.), Albany, New York.
Hon. HENRY R. SELDEN (Late Judge Court of Appeals), Rochester, New York.
ALEX. W. HARVEY (Judge Adv. Gen., S. N. Y.), Buffalo, New York.
AUGUSTUS C. TAYLOR, Esq., Buffalo, New York.
Gen. E. A. MERRITT, Quartermaster-General S. N. Y., State Arsenal, New York City
R. C. ROOT, Esq., Vice-President Atlantic Bank, New York City.
DAVID COWEE, Second National Bank, Troy, New York,
Dr. F. R. BREWER, First National Bank, Titusville, Pa.
SAMUEL BOWNER "Downer Oil Works," Corry, Pa.